RESIDUES OF PESTICIDE CHEMICALS

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HEARING

BEFORE THE

SUBCOMMITTEE ON HEALTH

OF THE

COMMITTEE ON LABOR AND PUBLIC WELFARE

UNITED STATES SENATE

EIGHTY-THIRD CONGRESS

SECOND SESSION

ON

S. 2868

A BILL TO AMEND THE FEDERAL FOOD, DRUG, AND COSMETIC ACT WITH RESPECT TO RESIDUES OF PESTICIDE CHEMICALS IN OR ON RAW AGRICULTURAL COMMODITIES

AND

H. R. 7125

AN ACT TO AMEND THE FEDERAL FOOD, DRUG, AND COSMETIC ACT WITH RESPECT TO RESIDUES OF PESTICIDE CHEMICALS IN OR ON RAW AGRICULTURAL COMMODITIES

JUNE 23, 1954

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RESIDUES OF PESTICIDE CHEMICALS

WEDNESDAY, JUNE 23, 1954

UNITED STATES SENATE,
COMMITTEE ON LABOR AND PUBLIC WELFARE,
SUBCOMMITTEE ON HEALTH,
Washington, D. C.

The subcommittee met at 10:05 a. m., pursuant to notice, in room P-63 of the Capitol, Senator William A. Purtell, chairman of the subcommittee, presiding.

Present: Senators Purtell (chairman of the subcommittee) and Cooper.

Also present: Melvin W. Sneed and William G. Reidy, professional staff members.

Senator PURTELL. The hearing of the Subcommittee on Health will come to order.

Our business this morning is to hear witnesses on S. 2868 and H. R. 7125 to amend the Federal Food, Drug, and Cosmetic Act with respect to residues of pesticide chemicals in or on raw agricultural commodities.

Bills S. 2868, H. R. 7125, together with the report of the House Committee on Interstate and Foreign Commerce, the reports of the Department of Health, Education, and Welfare, Department of Agriculture, and the Bureau of the Budget will become a part of the record.

(The bills and the reports are as follows:)

[S. 2868, 83d Cong., 2d sess.]

A BILL To amend the Federal Food, Drug, and Cosmetic Act with respect to residues of pesticide chemicals in or on raw agricultural commodities

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 201 of the Federal Food, Drug, and Cosmetic Act is amended by adding at the end thereof the following new paragraphs:

"(q) The term 'pesticide chemical' means any substance which, alone, in chemical combination or in formulation with one or more other substances, is an 'economic poison' within the meaning of the Federal Insecticide, Fungicide, and Rodenticide Act (7 U. S. C., secs. 135–135k) as now in force or as hereafter amended, and which is used in the production, storage, and transportation of raw agricultural commodities.

"(r) The term 'raw agricultural commodity' means any food in its raw or natural state, including all fruits that are washed, colored, or otherwise treated in their unpeeled natural form prior to marketing."

SEC. 2. Clause (2) of section 402 (a) of the Federal Food, Drug, and Cosmetic Act is amended to read as follows:

"(2) if it bears or contains any added poisonous or added deleterious substance, except a pesticide chemical in or on a raw agricultural commodity, which is unsafe within the meaning of section 406, or if it is a raw agricultural commodity and it bears or contains a pesticide chemical which is unsafe within the meaning of section 408 (a);"

SEC. 3. Chapter IV of the Federal Food, Drug, and Cosmetic Act is amended by adding at the end thereof the following new section:

"TOLERANCES FOR PESTICIDE CHEMICALS IN OR ON RAW AGRICULTURAL COMMODITIES

"SEC. 408. (a) Any poisonous or deleterious pesticide chemical, or any pesticide chemical which is not generally recognized, among experts qualified by scientific training and experience to evaluate the safety of pesticide chemicals, as safe for use, added to a raw agricultural commodity, shall be deemed unsafe for the purposes of the application of clause (2) of section 402 (a) unless—

"(1) a tolerance for such pesticide chemical in or on the raw agricultural commodity has been prescribed by the Secretary of Health, Education, and Welfare under this section and the quantity of such pesticide chemical in or on the raw agricultural commodity is within the limts of the tolerance so prescrbed; or

"(2) with respect to use in or on such raw agricultural commodity, the pesticide chemical has been exempted from the requirement of a tolerance by the Secretary under this section.

While a tolerance or exemption from tolerance is in effect for a pesticide chemical with respect to any raw agricultural commodity, such raw agricultural commodity shall not, by reason of bearing or containing any added amount of such pesticide chemical, be considered to be adulterated within the meaning of clause (1) of section 402 (a).

"(b) The Secretary shall promulgate regulations establishing tolerances with respect to the use in or on raw agricultural commodities of poisonous or deleterious pesticide chemicals and of pesticide chemicals which are not generally recognized, among experts qualified by scientific training and experience to evaluate the safety of pesticide chemicals, as safe for use, to the extent necessary to protect the public health. In establishing any such regulation, the Secretary shall give appropriate consideration, among other relevant factors, (1) to the necessity for the production of an adequate, wholesome, and economical food supply; (2) to the other ways in which the consumer may be affected by the same pesticide chemical or by other related substances that are poisonous or deleterious; and (3) to the opinion of the Secretary of Agriculture as submitted with a certification of usefulness under subsection (1) of this section. Such regulations shall be promulgated in the manner prescribed in subsection (d) or (e) of this section. In carrying out the provisions of this section relating to the establishment of tolerances, the Secretary may establish the tolerance applicable with respect to the use of any pesticide chemical in or on any raw agricultural commodity at zero level if the scientific data before the Secretary does not justify the establishment of a greater tolerance.

"(c) The Secretary shall promulgate regulations exempting any pesticide chemical from the necessity of a tolerance with respect to use in or on any or all raw agricultural commodities when such a tolerance is not necessary to protect the public health. Such regulations shall be promulgated in the manner prescribed in subsection (d) or (e) of this section.

"(d) (1) Any person who has registered, or who has submitted an application for the registration of, an economic poison under the Federal Insecticide, Fungicide, and Rodenticide Act may file with the Secretary of Health, Education, and Welfare, a petition proposing the issuance of a regulation establishing a tolerance for a pesticide chemical which constitutes, or is an ingredient of, such economic poison, or exempting the pesticide chemical from a tolerance. The petition shall contain data showing—

"(A) the name, chemical identity, and composition of the pesticide chemical;

"(B) the amount, frequency, and time of application of the pesticide chemical;

"(C) full reports of investigations made with respect to the safety of the pesticide chemical;

"(D) the results of tests on the amount of residue remaining, including a description of the analytical methods used;

"(E) practicable methods for removing residue which exceeds any proposed tolerance;

"(F) proposed tolerances for the pesticide chemical if tolerances are proposed; and

"(G) reasonable grounds in support of the petition. Samples of the pesticide chemical shall be furnished to the Secretary upon request. Notice of the filing

of such petition shall be published in general terms by the Secretary within thirty days after filing. Such notice shall include the analytical methods available for the determination of the residue of the pesticide chemical for which a tolerance or exemption is proposed.

"(2) Within ninety days after a certification of usefulness by the Secretary of Agriculture under subsection (1) with respect to the pesticide chemical named in the petition, the Secretary shall, after giving due consideration to the data submitted in the petition or otherwise before him, by order make public a regulation—

"(A) establishing a tolerance for the pesticide chemical named in the petition for the purposes for which it is so certified as useful, or

"(B) exempting the pesticide chemical from the necessity of a tolerance for such purposes,

unless within such ninety-day period the person filing the petition requests that the petition be referred to an advisory committee or the Secretary within such period otherwise deems such referral necessary, in either of which event the provisions of paragraph (3) of this subsection shall apply in lieu hereof.

"(3) In the event that the person filing the petition requests, within ninety days after a certification of usefulness by the Secretary of Agriculture under subsection (1) with respect to the pesticide chemical named in the petition, that the petition be referred to an advisory committee, or the Secretary within such period otherwise deems such referral necessary, the Secretary shall forthwith submit the petition and other data before him to an advisory committee to be appointed in accordance with subsection (g) of this section. As soon as practicable after such referral, but not later than sixty days thereafter, unless extended as hereinafter provided, the committee shall, after independent study of the data submitted to it by the Secretary and other data before it, certify to the Secretary a report and recommendations on the proposal in the petition to the Secretary, together with all underlying data and a statement of the reasons or basis for the recommendations. The sixty-day period provided for herein may be extended by the advisory committee for an additional thirty days if the advisory committee deems this necessary. Within thirty days after such certification, the Secretary shall, after giving due consideration to all data then before him, including such report, recommendations, underlying data, and statement, by order make public a regulation—

"(A) establishing a tolerance for the pesticide chemical named in the petition for the purposes for which it is so certified as useful; or

"(B) exempting the pesticide chemical from the necessity of a tolerance for such purposes.

"(4) The regulations published under paragraph (2) or (3) of this subsection will be effective upon publication.

"(5) Within thirty days after publication, any person adversely affected by a regulation published pursuant to paragraph (2) or (3) of this subsection, or pursuant to subsection (e), may file objections thereto with the Secretary, specifying with particularity the provisions of the regulation deemed objectionable, stating reasonable grounds therefor, and requesting a public hearing upon such objections. A copy of the objections filed by a person other than the petitioner shall be served on the petitioner, if the regulation was issued pursuant to a petition. The petitioner shall have two weeks to make a written reply to the objections. The Secretary shall thereupon, after due notice, hold such public hearing for the purpose of receiving evidence relevant and material to the issues raised by such objections. Any report, recommendations, underlying data, and reasons certified to the Secretary by an advisory committee shall be made a part of the record of the hearing, if relevant and material, subject to the provisions of section 7 (c) of the Administrative Procedure Act (5 U. S. C., sec. 1006 (c)). The National Academy of Sciences shall designate a member of the advisory committee to appear and testify at any such hearing with respect to the report and recommendations of such committee upon request of the Secretary, the petitioner, or the officer conducting the hearing: *Provided*, That this shall not preclude any other member of the advisory committee from appearing and testifying at such hearing. As soon as practicable after completion of the hearing, the Secretary shall act upon such objections and by order make public a regulation. Such regulation shall be based only on substantial evidence of record at such hearing, including any report, recommendations, underlying data, and reasons certified to the Secretary by an advisory committee, and shall set forth detailed findings of fact upon which the regulation is based. No such order shall take effect prior to the ninetieth day after its publication, unless the Secretary finds that emer-

gency conditions exist necessitating an earlier effective date, in which event the Secretary shall specify in the order his findings as to such conditions.

"(e) The Secretary may at any time, upon his own initiative or upon the request of any interested person, propose the issuance of a regulation establishing a tolerance for a pesticide chemical or exempting it from the necessity of a tolerance. Thirty days after publication of such a proposal, the Secretary may by order publish a regulation based upon the proposal which shall become effective upon publication unless within such thirty-day period a person, who has registered, or who has submitted an application for the registration of, an economic poison under the Federal Insecticide, Fungicide, and Rodenticide Act containing the pesticide chemical named in the proposal, requests that the proposal be referred to an advisory committee. In the event of such a request, the Secretary shall forthwith submit the proposal and other relevant data before him to an advisory committee to be appointed in accordance with subsection (g) of this section. As soon as practicable after such referral, but not later than sixty days thereafter, unless extended as hereinafter provided, the committee shall, after independent study of the data submitted to it by the Secretary and other data before it, certify to the Secretary a report and recommendations on the proposal together with all underlying data and a statement of the reasons or basis for the recommendations. The sixty-day period provided for herein may be extended by the advisory committee for an additional thirty days if the advisory committee deems this necessary. Within thirty days after such certification, the Secretary may, after giving due consideration to all data before him, including such report, recommendations, underlying data and statement, by order publish a regulation establishing a tolerance for the pesticide chemical named in the proposal or exempting it from the necessity of a tolerance which shall become effective upon publication. Regulations issued under this subsection shall upon publication be subject to paragraph (5) or subsection (d).

"(f) All data submitted to the Secretary or to an advisory committee in support of a petition under this section shall be considered confidential by the Secretary and by such advisory committee until publication of a regulation under paragraph (2) or (3) of subsection (d) of this section. Until such publication, such data shall not be revealed to any person other than those authorized by the Secretary or by an advisory committee in the carrying out of their official duties under this section.

"(g) Whenever the referral of a petition or proposal to an advisory committee is requested under this section, or the Secretary otherwise deems such referral necessary the Secretary shall forthwith appoint a committee of competent experts to review the petition or proposal and to make a report and recommendations thereon. Each such advisory committee shall be composed of experts, qualified in the subject matter of the petition and of adequately diversified professional background selected by the National Academy of Sciences and shall include one or more representatives from land-grant colleges. The size of the committee shall be determined by the Secretary. Members of an advisory committee shall receive as compensation for their services a reasonable per diem, which the Secretary shall by rules and regulations prescribe, for time actually spent in the work of the committee, and shall in addition be reimbursed for their necessary traveling and subsistence expenses while so serving away from their places of residence. The members shall not be subject to any other provisions of law regarding the appointment and compensation of employees of the United States. The Secretary shall furnish the committee with adequate clerical and other assistance, and shall by rules and regulations prescribe the procedure to be followed by the committee.

"(h) A person who has filed a petition or who has requested the referral of a proposal to an advisory committee in accordance with the provisions of this section, as well as representatives of the Department of Health, Education, and Welfare, shall have the right to consult with any advisory committee provided for in subsection (g) in connection with the petition or proposal.

"(i) (1) In a case of actual controversy as to the validity of any order under subsection (d) (5), (e), or (1) any person who will be adversely affected by such order may obtain judicial review by filing in the United States Court of Appeals for the circuit wherein such person resides or has his principal place of business, or in the United States Court of Appeals for the District of Columbia Circuit, within sixty days after the entry of such order, a petition praying that the order be set aside in whole or in part.

"(2) In the case of a petition with respect to an order under subsection (d) (5) or (e), a copy of the petition shall be forthwith served upon the Secretary,

or upon any officer designated by him for that purpose, and thereupon the Secretary shall certify and file in the court a transcript of the proceedings and the record on which he based his order. Upon such filing, the court shall have exclusive jurisdiction to affirm or set aside the order complained of in whole or in part. The findings of the Secretary with respect to questions of fact shall be sustained if supported by substantial evidence when considered on the record as a whole, including any report and recommendation of an advisory committee.

"(3) In the case of a petition with respect to an order under subsection (1), a copy of the petition shall be forthwith served upon the Secretary of Agriculture, or upon any officer designated by him for that purpose, and thereupon the Secretary shall certify and file in the court a transcript of the proceedings and the record on which he based his order. Upon such filing, the court shall have exclusive jurisdiction to affirm or set aside the order complained of in whole or in part. The findings of the Secretary with respect to questions of fact shall be sustained if supported by substantial evidence when considered on the record as a whole.

"(4) If application is made to the court to leave to adduce additional evidence, the court may order such additional evidence to be taken before the Secretary of Health, Education, and Welfare or the Secretary of Agriculture, as the case may be, and to be adduced upon the hearing in such manner and upon such terms and conditions as to the court may seem proper, if such evidence is material and there were reasonable grounds for failure to adduce such eviednce in the proceedings below. The Secretary of Health, Education, and Welfare or the Secretary of Agriculture, as the case may be, may modify his findings as to the facts and order by reason of the additional evidence so taken, and shall file with the court such modified findings and order.

"(5) The judgment of the court affirming or setting aside, in whole or in part, any order under this section shall be final, subject to review by the Supreme Court of the United States upon certiorari or certification as provided in section 1254 of title 28 of the United States Code. The commencement of proceedings under this section shall not, unless specifically ordered by the court to the contrary, operate as a stay of an order. The courts shall advance on the docket and expedite the disposition of all causes filed therein pursuant to this section.

"(j) The Secretary may, upon the request of any person who has obtained an experimental permit for a pesticide chemical under the Federal Insecticide, Fungicide, and Rodenticide Act or upon his own initiative, establish a temporary tolerance for the pesticide chemical for the uses covered by the permit whenever in his judgment such action is deemed necessary to protect the public health, or may temporarily exempt such pesticide chemical from a tolerance. In establishing such a tolerance, the Secretary shall give due regard to the necessity for experimental work in developing an adequate, wholesome, and economical food supply and to the limited hazard to the public health involved in such work when conducted in accordance with applicable regulations under the Federal Insecticide, Fungicide, and Rodenticide Act.

"(k) Regulations affecting pesticide chemicals in or on raw agricultural commodities which are promulgated under the authority of section 406 (a) upon the basis of public hearings instituted before January 1, 1953, in accordance with section 701 (e), shall be deemed to be regulations under this section and shall be subject to amendment or repeal as provided in subsection (m).

"(l) The Secretary of Agriculture, upon request of any person who has registered, or who has submitted an application for the registration of, an economic poison under the Federal Insecticide, Fungicide, and Rodenticide Act, and whose request is accompanied by a copy of a petition filed by such a person under subsection (d) (1) with respect to a pesticide chemical which constitutes, or is an ingredient of, such economic poison, shall, within thirty days or within sixty days if upon notice prior to the termination of such thirty days the Secretary deems it necessary to postpone action for such period, on the basis of data before him, either—

"(1) certify to the Secretary of Health, Education, and Welfare that such pesticide chemical is useful for the purpose for which a tolerance or exemption is sought; or

"(2) notify the person requesting the certification of his proposal to certify that the pesticide chemical does not appear to be useful for the purpose for which a tolerance or exemption is sought, or appears to be useful for only some of the purposes for which a tolerance or exemption is sought.

In the event that the Secretary of Agriculture takes the action described in clause (2) of the preceding sentence, the person requesting the certification, within

one week after receiving the proposed certification, may either (A) request the Secretary of Agriculture to certify to the Secretary of Health, Education, and Welfare on the basis of the proposed certification; (B) request a hearing on the proposed certification or the parts thereof objected to; or (C) request both such certification and such hearing. If no such action is taken, the Secretary may by order make the certification as proposed. In the event that the action described in clause (A) or (C) is taken, the Secretary shall by order make the certification as proposed with respect to such parts thereof as are requested. In the event a hearing is requested, the Secretary of Agriculture shall provide opportunity for a prompt hearing. The certification of the Secretary of Agriculture as the result of such hearing shall be made by order and shall be based only on substantial evidence of record at the hearing and shall set forth detailed findings of fact. In no event shall the time elapsing between the making of a request for a certification under this subsection and final certification by the Secretary of Agriculture exceed one hundred and sixty days. The Secretary shall submit to the Secretary of Health, Education, and Welfare with any certification of usefulness under this subsection an opinion, based on the data before him, whether the tolerance or exemption proposed by the petitioner reasonably reflects the amount of residue likely to result when the pesticide chemical is used in the manner proposed for the purpose for which the certification is made. The Secretary of Agriculture, after due notice and opportunity for public hearing, is authorized to promulgate rules and regulations for carrying out the provisions of this subsection.

"(m) The Secretary of Health, Education, and Welfare shall prescribe by regulations the procedure by which regulations under this section may be amended or repealed, and such procedure shall conform to the procedure provided in this section for the promulgation of regulations establishing tolerances, including the appointment of advisory committees and the procedure for referring petitions to such committees.

"(n) The provisions of section 303 (c) of the Federal Food, Drug, and Cosmetic Act with respect to the furnishing of guaranties shall be applicable to raw agricultural commodities covered by this section."

SEC. 4. There are hereby authorized to be appropriated, out of any moneys in the Treasury not otherwise appropriated, such sums as may be necessary for the purpose and administration of this Act.

SEC. 5. This Act shall take effect upon the date of its enactment, except that with respect to pesticide chemicals for which tolerances or exemptions have not been established under section 408 of the Federal Food, Drug, and Cosmetic Act, the amendment to section 402 (a) of such Act made by section 2 of this Act shall not be effective—

(1) for the period of one year following the date of the enactment of this Act; or

(2) for such additional period following such period of one year, but not extending beyond two years after the date of the enactment of this Act, as the Secretary of Health, Education, and Welfare may prescribe on the basis of a finding that conditions exist which necessitate the prescribing of such additional period.

[H. R. 7125, 83d Cong., 2d sess.]

AN ACT To amend the Federal Food, Drug, and Cosmetic Act with respect to residues of pesticide chemicals in or on raw agricultural commodities

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 201 of the Federal Food, Drug, and Cosmetic Act is amended by adding at the end thereof the following new paragraphs:

"(q) The term 'pesticide chemical' means any substance which, alone, in chemical combination or in formulation with one or more other substances, is an 'economic poison' within the meaning of the Federal Insecticide, Fungicide, and Rodenticide Act (7 U. S. C., secs. 135–135k) as now in force or as hereafter amended, and which is used in the production, storage, or transportation of raw agricultural commodities.

"(r) The term 'raw agricultural commodity' means any food in its raw or natural state, including all fruits that are washed, colored, or otherwise treated in their unpeeled natural form prior to marketing."

SEC. 2. Clause (2) of section 402 (a) of the Federal Food, Drug, and Cosmetic Act is amended to read as follows: "(2) if it bears or contains any added poisonous or added deleterious substance, except a pesticide chemical in or on a raw agricultural commodity, which is unsafe within the meaning of section 406, or if it is a raw agricultural commodity and it bears or contains a pesticide chemical which is unsafe within the meaning of section 408 (a);".

SEC. 3. Chapter IV of the Federal Food, Drug, and Cosmetic Act is amended by adding at the end thereof the following new section:

"TOLERANCES FOR PESTICIDE CHEMICALS IN OR ON RAW AGRICULTURAL COMMODITIES

"SEC. 408. (a) Any poisonous or deleterious pesticide chemical, or any pesticide chemical which is not generally recognized, among experts qualified by scientific training and experience to evaluate the safety of pesticide chemicals, as safe for use, added to a raw agricultural commodity, shall be deemed unsafe for the purposes of the application of clause (2) of section 402 (a) unless—

"(1) a tolerance for such pesticide chemical in or on the raw agricultural commodity has been prescribed by the Secretary of Health, Education, and Welfare under this section and the quantity of such pesticide chemical in or on the raw agricultural commodity is within the limits of the tolerance so prescribed; or

"(2) with respect to use in or on such raw agricultural commodity, the pesticide chemical has been exempted from the requirement of a tolerance by the Secretary under this section.

While a tolerance or exemption from tolerance is in effect for a pesticide chemical with respect to any raw agricultural commodity, such raw agricultural commodity shall not, by reason of bearing or containing any added amount of such pesticide chemical, be considered to be adulterated within the meaning of clause (1) of section 402 (a).

"(b) The Secretary shall promulgate regulations establishing tolerances with respect to the use in or on raw agricultural commodities of poisonous or deleterious pesticide chemicals and of pesticide chemicals which are not generally recognized, among experts qualified by scientific training and experience to evaluate the safety of pesticide chemicals, as safe for use, to the extent necessary to protect the public health. In establishing any such regulation, the Secretary shall give appropriate consideration, among other relevant factors, (1) to the necessity for the production of an adequate, wholesome, and economical food supply; (2) to the other ways in which the consumer may be affected by the same pesticide chemical or by other related substances that are poisonous or deleterious; and (3) to the opinion of the Secretary of Agriculture as submitted with a certification of usefulness under subsection (l) of this section. Such regulations shall be promulgated in the manner prescribed in subsection (d) or (e) of this section. In carrying out the provisions of this section relating to the establishment of tolerances, the Secretary may establish the tolerance applicable with respect to the use of any pesticide chemical in or on any raw agricultural commodity at zero level if the scientific data before the Secretary does not justify the establishment of a greater tolerance.

"(c) The Secretary shall promulgate regulations exempting any pesticide chemical from the necessity of a tolerance with respect to use in or on any or all raw agricultural commodities when such a tolerance is not necessary to protect the public health. Such regulations shall be promulgated in the manner prescribed in subsection (d) or (e) of this section.

"(d) (1) Any person who has registered, or who has submitted an application for the registration of, an economic poison under the Federal Insecticide, Fungicide, and Rodenticide Act may file with the Secretary of Health, Education, and Welfare, a petition proposing the issuance of a regulation establishing a tolerance for a pesticide chemical which constitutes, or is an ingredient of, such economic poison, or exempting the pesticide chemical from the requirement of a tolerance. The position shall contain data showing—

"(A) the name, chemical identity, and composition of the pesticide chemical;

"(B) the amount, frequency, and time of application of the pesticide chemical;

"(C) full reports of investigations made with respect to the safety of the pesticide chemical;

"(D) the results of tests on the amount of residue remaining, including a description of the analytical methods used;

"(E) practicable methods for removing residue which exceeds any proposed tolerance;

"(F) proposed tolerances for the pesticide chemical if tolerances are proposed; and

"(G) reasonable grounds in support of the petition. Samples of the pesticide chemical shall be furnished to the Secretary upon request. Notice of the filing of such petition shall be published in general terms by the Secretary within thirty days after filing. Such notice shall include the analytical methods available for the determination of the residue of the pesticide chemical for which a tolerance or exemption is proposed.

"(2) Within ninety days after a certification of usefulness by the Secretary of Agriculture under subsection (l) with respect to the pesticide chemical named in the petition, the Secretary of Health, Education, and Welfare shall, after giving due consideration to the data submitted in the petition or otherwise before him, by order make public a regulation—

"(A) establishing a tolerance for the pesticide chemical named in the petition for the purposes for which it is so certified as useful, or

"(B) exempting the pesticide chemical from the necessity of a tolerance for such purposes,

unless within such ninety-day period the person filing the petition requests that the petition be referred to an advisory committee or the Secretary within such period otherwise deems such referral necessary, in either of which events the provisions of paragraph (3) of this subsection shall apply in lieu hereof.

"(3) In the event that the person filing the petition requests, within ninety days after a certification of usefulness by the Secretary of Agriculture under subsection (l) with respect to the pesticide chemical named in the petition, that the petition be referred to an advisory committee, or in the event the Secretary of Health, Education, and Welfare within such period otherwise deems such referral necessary, the Secretary of Health, Education, and Welfare shall forthwith submit the petition and other data before him to an advisory committee to be appointed in accordance with subsection (g) of this section. As soon as practicable after such referral, but not later than sixty days thereafter, unless extended as hereinafter provided, the committee shall, after independent study of the data submitted to it by the Secretary and other data before it, certify to the Secretary a report and recommendations on the proposal in the petition to the Secretary, together with all underlying data and a statement of the reasons or basis for the recommendations. The sixty-day period provided for herein may be extended by the advisory committee for an additional thirty days if the advisory committee deems this necessary. Within thirty days after such certification, the Secretary shall, after giving due consideration to all data then before him, including such report, recommendations, underlying data, and statement, by order make public a regulation—

"(A) establishing a tolerance for the pesticide chemical named in the petition for the purposes for which it is so certified as useful; or

"(B) exempting the pesticide chemical from the necessity of a tolerance for such purposes.

"(4) The regulations published under paragraph (2) or (3) of this subsection will be effective upon publication.

"(5) Within thirty days after publication, any person adversely affected by a regulation published pursuant to paragraph (2) or (3) of this subsection, or pursuant to subsection (e), may file objections thereto with the Secretary, specifying with particularity the provisions of the regulation deemed objectionable, stating reasonable grounds therefor, and requesting a public hearing upon such objections. A copy of the objections filed by a person other than the petitioner shall be served on the petitioner, if the regulation was issued pursuant to a petition. The petitioner shall have two weeks to make a written reply to the objections. The Secretary shall thereupon, after due notice, hold such public hearing for the purpose of receiving evidence relevant and material to the issues raised by such objections. Any report, recommendations, underlying data, and reasons certified to the Secretary by an advisory committee shall be made a part of the record of the hearing, if relevant and material, subject to the provisions of section 7 (c) of the Administrative Procedure Act (5 U. S. C., sec. 1006 (c)). The National Academy of Sciences shall designate a member of the advisory committee to appear and testify at any such hearing with respect to the report and recommendations of such committee upon request of the Secretary, the petitioner, or the officer conducting the hearing: *Provided*, That this shall not preclude any other member of the advisory committee from appearing and testifying at such

hearing. As soon as practicable after completion of the hearing, the Secretary shall act upon such objections and by order make public a regulation. Such regulation shall be based only on substantial evidence of record at such hearing, including any report, recommendations, underlying data, and reasons certified to the Secretary by an advisory committee, and shall set forth detailed findings of fact upon which the regulation is based. No such order shall take effect prior to the ninetieth day after its publication, unless the Secretary finds that emergency conditions exist necessitating an earlier effective date, in which event the Secretary shall specify in the order his findings as to such conditions.

"(e) The Secretary may at any time, upon his own initiative or upon the request of any interested person, propose the issuance of a regulation establishing a tolerance for a pesticide chemical or exempting it from the necessity of a tolerance. Thirty days after publication of such proposal, the Secretary may by order publish a regulation based upon the proposal which shall become effective upon publication unless within such thirty-day period a person who has registered, or who has submitted an application for the registration of, an economic poison under the Federal Insecticide, Fungicide, and Rodenticide Act containing the pesticide chemical named in the proposal, requests that the proposal be referred to an advisory committee. In the event of such a request, the Secretary shall forthwith submit the proposal and other relevant data before him to an advisory committee to be appointed in accordance with subsection (g) of this section. As soon as practicable after such referral, but not later than sixty days thereafter, unless extended as hereinafter provided, the committee shall, after independent study of the data submitted to it by the Secretary and other data before it, certify to the Secretary a report and recommendations on the proposal together with all underlying data and a statement of the reasons or basis for the recommendations. The sixty-day period provided for herein may be extended by the advisory committee for an additional thirty days if the advisory committee deems this necessary. Within thirty days after such certification, the Secretary may, after giving due consideration to all data before him, including such report, recommendations, underlying data and statement, by order publish a regulation establishing a tolerance for the pesticide chemical named in the proposal or exempting it from the necessity of a tolerance which shall become effective upon publication. Regulations issued under this subsection shall upon publication be subject to paragraph (5) of subsection (d).

"(f) All data submitted to the Secretary or to an advisory committee in support of a petition under this section shall be considered confidential by the Secretary and by such advisory committee until publication of a regulation under paragraph (2) or (3) of subsection (d) of this section. Until such publication, such data shall not be revealed to any person other than those authorized by the Secretary or by an advisory committee in the carrying out of their official duties under this section.

"(g) Whenever the referral of a petition or proposal to an advisory committee is requested under this section, or the Secretary otherwise deems such referral necessary the Secretary shall forthwith appoint a committee of competent experts to review the petition or proposal and to make a report and recommendations thereon. Each such advisory committee shall be composed of experts, qualified in the subject matter of the petition and of adequately diversified professional background selected by the National Academy of Sciences and shall include one or more representatives from land-grant colleges. The size of the committee shall be determined by the Secretary. Members of an advisory committee shall receive as compensation for their services a reasonable per diem, which the Secretary shall by rules and regulations prescribe, for time actually spent in the work of the committee, and shall in addition be reimbursed for their necessary traveling and subsistence expenses while so serving away from their places of residence. The members shall not be subject to any other provisions of law regarding the appointment and compensation of employees of the United States. The Secretary shall furnish the committee with adequate clerical and other assistance, and shall by rules and regulations prescribe the procedure to be followed by the committee.

"(h) A person who has filed a petition or who has requested the referral of a proposal to an advisory committee in accordance with the provisions of this section, as well as representatives of the Department of Health, Education, and Welfare, shall have the right to consult with any advisory committee provided for in subsection (g) in connection with the petition or proposal.

"(i) (1) In a case of actual controversy as to the validity of any order under subsection (d) (5), (e), or (l) any person who will be adversely affected by

such order may obtain judicial review by filing in the United States Court of Appeals for the circuit wherein such person resides or has his principal place of business, or in the United States Court of Appeals for the District of Columbia Circuit, within sixty days after the entry of such order, a petition praying that the order be set aside in whole or in part.

"(2) In the case of a petition with respect to an order under subsection (d) (5) or (e), a copy of the petition shall be forthwith served upon the Secretary, or upon any officer designated by him for that purpose, and thereupon the Secretary shall certify and file in the court a transcript of the proceedings and the record on which he based his order. Upon such filing, the court shall have exclusive jurisdiction to affirm or set aside the order complained of in whole or in part. The findings of the Secretary with respect to questions of fact shall be sustained if supported by substantial evidence when considered on the record as a whole, including any report and recommendation of an advisory committee.

"(3) In the case of a petition with respect to an order under subsection (l), a copy of the petition shall be forthwith served upon the Secretary of Agriculture, or upon any officer designated by him for that purpose, and thereupon the Secretary shall certify and file in the court a transcript of the proceedings and the record on which he based his order. Upon such filing, the court shall have exclusive jurisdiction to affirm or set aside the order complained of in whole or in part. The findings of the Secretary with respect to questions of fact shall be sustained if supported by substantial evidence when considered on the record as a whole.

"(4) If application is made to the court for leave to adduce additional evidence, the court may order such additional evidence to be taken before the Secretary of Health, Education, and Welfare or the Secretary of Agriculture, as the case may be, and to be adduced upon the hearing in such manner and upon such terms and conditions as to the court may seem proper, if such evidence is material and there were reasonable grounds for failure to adduce such evidence in the proceedings below. The Secretary of Health, Education, and Welfare or the Secretary of Agriculture, as the case may be, may modify his findings as to the facts and order by reason of the additional evidence so taken, and shall file with the court such modified findings and order.

"(5) The judgment of the court affirming or setting aside, in whole or in part, any order under this section shall be final, subject to review by the Supreme Court of the United States upon certiorari or certification as provided in section 1254 of title 28 of the United States Code. The commencement of proceedings under this section shall not, unless specifically ordered by the court to the contrary, operate as a stay of an order. The courts shall advance on the docket and expedite the disposition of all causes filed therein pursuant to this section.

"(j) The Secretary may, upon the request of any person who has obtained an experimental permit for a pesticide chemical under the Federal Insecticide, Fungicide, and Rodenticide Act or upon his own initiative, establish a temporary tolerance for the pesticide chemical for the uses covered by the permit whenever in his judgment such action is deemed necessary to protect the public health, or may temporarily exempt such pesticide chemical from a tolerance. In establishing such a tolerance, the Secretary shall give due regard to the necessity for experimental work in developing an adequate, wholesome, and economical food supply and to the limited hazard to the public health involved in such work when conducted in accordance with applicable regulations under the Federal Insecticide, Fungicide, and Rodenticide Act.

"(k) Regulations affecting pesticide chemicals in or on raw agricultural commodities which are promulgated under the authority of section 406 (a) upon the basis of public hearings instituted before January 1, 1953, in accordance with section 701 (e), shall be deemed to be regulations under this section and shall be subject to amendment or repeal as provided in subsection (m).

"(l) The Secretary of Agriculture, upon request of any person who has registered, or who has submitted an application for the registration of, an economic poison under the Federal Insecticide, Fungicide, and Rodenticide Act, and whose request is accompanied by a copy of a petition filed by such person under subsection (d) (1) with respect to a pesticide chemical which constitutes, or is an ingredients of, such economic poison, shall, within thirty days or within sixty days if upon notice prior to the termination of such thirty days the Secretary deems it necessary to postpone action for such period, on the basis of data before him, either—

"(1) certify to the Secretary of Health, Education, and Welfare that such pesticide chemical is useful for the purpose for which a tolerance or exemption is sought; or

"(2) notify the person requesting the certification of his proposal to certify that the pesticide chemical does not appear to be useful for the purpose for which a tolerance or exemption is sought, or appears to be useful for only some of the purposes for which a tolerance or exemption is sought.

In the event that the Secretary of Agriculture takes the action described in clause (2) of the preceding sentence, the person requesting the certification, within one week after receiving the proposed certification, may either (A) request the Secretary of Agriculture to certify to the Secretary of Health, Education, and Welfare on the basis of the proposed certification; (B) request a hearing on the proposed certification or the parts thereof objected to; or (C) request both such certification and such hearing. If no such action is taken, the Secretary may by order make the certification as proposed. In the event that the action described in clause (A) or (C) is taken, the Secretary shall by order make the certification as proposed with respect to such parts thereof as are requested. In the event a hearing is requested, the Secretary of Agriculture shall provide opportunity for a prompt hearing. The certification of the Secretary of Agriculture as the result of such hearing shall be made by order and shall be based only on substantial evidence of record at the hearing and shall set forth detailed findings of fact. In no event shall the time elapsing between the making of a request for a certification under this subsection and final certification by the Secretary of Agriculture exceed one hundred and sixty days. The Secretary shall submit to the Secretary of Health, Education, and Welfare with any certification of usefulness under this subsection an opinion, based on the data before him, whether the tolerance or exemption proposed by the petitioner reasonably reflects the amount of residue likely to result when the pesticide chemical is used in the manner proposed for the purpose for which the certification is made. The Secretary of Agriculture, after due notice and opportunity for public hearing, is authorized to promulgate rules and regulations for carrying out the provisions of this subsection.

"(m) The Secretary of Health, Education, and Welfare shall prescribe by regulations the procedure by which regulations under this section may be amended or repealed, and such procedure shall conform to the procedure provided in this section for the promulgation of regulations establishing tolerances, including the appointment of advisory committees and the procedure for referring petitions to such committees.

"(n) The provisions of section 303 (c) of the Federal Food, Drug, and Cosmetic Act with respect to the furnishing of guaranties shall be applicable to raw agricultural commodities covered by this section."

SEC. 4. There are hereby authorized to be appropriated, out of any moneys in the Treasury not otherwise appropriated, such sums as may be necessary for the purpose and administration of this Act.

SEC. 5. This Act shall take effect upon the date of its enactment, except that with respect to pesticide chemicals for which tolerances or exemptions have not been established under section 408 of the Federal Food, Drug, and Cosmetic Act, the amendment to section 402 (a) of such Act made by section 2 of this Act shall not be effective—

(1) for the period of one year following the date of the enactment of this Act; or

(2) for such additional period following such period of one year, but not extending beyond two years after the date of the enactment of this Act, as the Secretary of Health, Education, and Welfare may prescribe on the basis of a finding that conditions exist which necessitate the prescribing of such additional period.

Passed the House of Representatives April 5, 1954.

Attest:

LYLE O. SNADER, *Clerk.*

[H. Rept. No. 1385, 83d Cong., 2d sess.]

The primary purpose of the bill is to assure greater protection of the public health by improving, simplifying, and speeding up the method for regulating, under the provisions of the Federal Food, Drug, and Cosmetic Act, the amount of residue which may remain on raw agricultural commodities after use of pesticide chemicals. Pesticide chemicals are substances such as insecticides, fungicides, and weedkillers used in the production, storage, and transportation of food for the purpose of controlling insects, plant diseases, weeds, and other pests. This bill is an exercise of the power of Congress over the regulation of interstate commerce in adulterated food.

This bill would accomplish its purpose primarily by adding to the Federal Food, Drug, and Cosmetic Act an improved procedure for establishment of tolerances for pesticide chemicals remaining in or on raw agricultural commodities. Poisonous or deleterious substances intentionally added to, or which remain in, other food are subject to existing law and would not be affected by this bill.

A primary objective in drafting the bill was to develop legislation that would provide for prompt administrative action to permit effective use of pesticide chemicals without hazard to the public health; legislation that would be safe for consumers and practical for producers.

The committee knows of no opposition to the bill. All interested parties are agreed as to the need for the bill.

Existing law

Under existing law, added poisonous and deleterious substances—and most pesticide chemicals fall in this class—must be kept out of foods unless they are required in production or cannot be avoided by good manufacturing practice. When such a substance is required in production—as many pesticide chemicals are required in growing agricultural crops—a tolerance may be established by the Secretary of Health, Education, and Welfare, but only after a formal public hearing. (The maximum amount of residue that may lawfully remain in or on the food is commonly referred to as a tolerance.) Detailed findings of fact and conclusions must be made by the Secretary as to the required use of the pesticide and the residue levels that may safely be tolerated.

Need for new legislation

Regulations limiting the amount of pesticidal residue which may remain in or on food have been issued under the present law in only one instance, although the law authorizing such regulations has been in effect for over 15 years. During all that time control has been exercised through unofficial and informal tolerances. In 1950, lengthy public hearings were held for the purpose of establishing official tolerances (the maximum amount of poisonous or deleterious residue which may legally remain in or on food) for fresh fruits and vegetables. These hearings, at a cost of nearly a half-million dollars to Government, to industry, to agricultural organizations, and to the various land-grant colleges, produced a very large volume of evidence that had not theretofore been gathered together, but the record is still under consideration by the Government and the necessary tolerances have not yet been issued. This has been responsible for uncertainty under the law. It has handicapped the Government in enforcing the law, the grower in complying with the law, and the pesticide manufacturer and Federal and State agencies in discharging their responsibility for advising and making recommendations to the grower with respect to the use of pesticide chemicals. This, together with the introduction of a large number of new pesticide chemicals, some of which are known to be toxic, has been responsible for concern that existing law is inadequate to protect the public health.

It has been generally recognized that a primary reason why tolerances have not been established to control agricultural usage of pesticide chemicals as intended by Congress has been the cumbersome, time-consuming, and impracticable procedure prescribed by existing law.

SUMMARY OF THIS BILL

Under this bill, a regulation establishing a tolerance for a pesticide chemical used on raw agricultural commodities may be initiated by an applicant for registration of an economic poison under the Federal Insecticide, Fungicide, and Rodenticide Act or by the Secretary of Health, Education, and Welfare. It is anticipated that, in the usual case, registration of a new economic poison would be withheld by the Department of Agriculture pending the issuance of the tolerance.

The tolerance-setting process for a particular pesticide chemical started by a person other than the Secretary is accomplished by (*a*) filing with the Secretary of Agriculture a request to certify to the Secretary of Health, Education, and Welfare that the pesticide chemical is useful for its intended purpose and that the requested tolerance reflects the amount of residue, if any, likely to result when the pesticide is used as proposed; and (*b*) filing of a petition proposing the tolerance, together with supporting scientific data to establish safe residue levels with the Secretary of Health, Education, and Welfare. Within 90 days after the Secretary of Agriculture has certified to usefulness, the Secretary of Health, Education, and Welfare would make public a regulation establishing the tolerance.

The basic authority, under the bill, to establish tolerances or exemptions from tolerances directs the Secretary of Health, Education, and Welfare to limit in or on raw agricultural commodities residues of poisonous or deleterious pesticide chemicals and pesticide chemicals of unknown or uncertain toxicity "to the extent necessary to protect the public health." In doing so, the Secretary is directed to take into account the necessity for the production of an adequate, wholesome, and economical food supply and the Secretary of Agriculture's opinion as to the amount of residue that will remain, as well as the overall effect the pesticide chemical may have in consumers' diets.

The Secretary is authorized to fix the tolerance at zero—and thus prohibit any residue—when the scientific data submitted does not justify a greater tolerance.

Provision is made for the referral of a petition proposing a tolerance or exemption to an ad hoc advisory committee of scientific experts selected by the National Academy of Sciences for a report and recommendation where this is requested by the proponent of the tolerance or is otherwise deemed necessary by the Secretary of Health, Education, and Welfare. Such referral extends the time limits otherwise prescribed for administrative action. The report and recommendation of any such advisory committee is considered by the Secretary before a tolerance is established and may be made a part of the official record in the event of a public hearing, in accordance with the provisions of the Administrative Procedure Act.

Provision is also made, among other things, for the establishment of tolerance regulations by the Secretary of Health, Education, and Welfare, upon his own initiative, for the exemption of certain pesticide chemicals from the need for tolerances, and for the issuance of temporary tolerances. These are described in more detail in following parts of this report.

HISTORY OF THIS BILL

In 1938, when Congress first made specific provision for the regulation of pesticide residues on food, conditions were considerably different than they are today. At that time there were only a few pesticide chemicals on the market in strong contrast to the large number marketed today. The development and introduction of many new pesticide chemicals during the postwar years for use in the production, storage, and transportation of food has been one of the noteworthy contributions of industry research in the last decade. These chemicals have become vital tools in the production of an adequate, wholesome, and economical food supply, and it is accepted that without them the health and living standards of this Nation and of other countries dependent upon our food exports would be dangerously impaired. At the same time, the large number of these chemicals and the frequent introduction of new ones has focused attention upon the need, both from the standpoint of public health and agricultural use, for a more prompt and balanced form of control than is possible under a law geared to 1938 conditions.

The enactment in 1947 of the Federal Insecticide, Fungicide, and Rodenticide Act as a direct control over the marketing of pesticide chemicals with regard to their safety and effectiveness has brought about a general recognition that a better degree of coordination between this law and the provisions of the Federal Food, Drug, and Cosmetic Act pertaining to pesticidal residues on food would be beneficial.

In addition to these developments since 1938, a report by the Select Committee to Investigate the Use of Chemicals in Foods on the question of the use of chemicals in food has indicated the need for supplemental legislation in this field (H. Rept. No. 2356, 82d Cong., 2d sess.).

It was against this background that H. R. 4277 was introduced on March 26, 1953. That bill was similar in purpose and design to the bill here reported to the House, H. R. 7125.

A special subcommittee of this committee held a hearing on H. R. 4277 on July 14, 1953. At that hearing numerous witnesses testified in support of the bill and urged its early passage. There were objections raised, however, by the Department of Health, Education, and Welfare, the Department of Commerce, the Department of Agriculture, and by the Judicial Conference of the United States.

Following the hearing on H. R. 4277, the author of the bill, Government officials, farm organizations, and industry groups participated in a series of conferences for the purpose of working out the features of the bill deemed objectionable. These conferences were extremely fruitful, with the result that the important

issues in dispute were largely resolved to the satisfaction of all interested groups and a clean bill was introduced in the present session, H. R. 7125.

This committee held a hearing on H. R. 7125 on March 8, 1954. The testimony of the witnesses at this hearing and letters and statements filed by various interested persons and groups with this committee show a remarkable unanimity of support for this bill. There appears to be no opposition to the bill.

IMPROVEMENTS OVER EXISTING LAW

The principal respects in which this bill would change and improve existing law are—

1. A specific method for controlling the residue of pesticide chemicals which may remain in or on raw agricultural commodities is set up which is distinct from that controlling other poisonous or deleterious substances which are used in, or remain in, processed, fabricated, and manufactured food. In this way, recognition is given to the peculiar economic, agricultural, and public health problems which are important in the regulation of pesticide chemicals and to the statutory controls which now apply to these chemicals. Unlike many other chemicals, pesticide chemicals are necessary instruments of agriculture in producing and expanding our food supply and are comprehensively regulated by the Department of Agriculture under the Federal Insecticide, Fungicide, and Rodenticide Act.

2. The determination of questions of agricultural usefulness and probable residue levels involved in the establishment of tolerances, is made a function of the Department of Agriculture; while the determination of questions of a public health nature remains a function of the Department of Health, Education, and Welfare. In this way, a more logical grouping of governmental functions is effected than under existing law which casts the responsibility for determining agricultural questions as well as public health questions upon the Department of Health, Education, and Welfare.

3. Before any pesticide-chemical residue may remain in or on a raw agricultural commodity, scientific data must be presented to show that the pesticide-chemical residue is safe from the standpoint of the food consumer. The burden is on the person proposing the tolerance or exemption to establish the safety of such pesticide-chemical residue.

4. Specific time limits for informal administrative action in establishing tolerances are prescribed to avoid the adverse consequences of inaction and protracted delay. Promptness is vital in this area of regulation to all concerned.

5. Provision is made for the appointment of independent committees of scientific experts selected by the National Academy of Sciences to study proposed regulations establishing tolerances for pesticide chemicals and to make recommendations thereon to the Department of Health, Education, and Welfare. This provision, enabling the participation of disinterested experts in dealing with the highly technical and complex problems which attend this area of regulation, is one of the most important features of the bill.

6. The procedure prescribed for establishing tolerances emphasizes informal proceedings rather than the formal public hearing type of proceedings. This is accomplished in two ways: First, the bill sets up a procedure whereby the manufacturer or formulator most directly concerned with the establishment of a tolerance for a particular pesticide chemical has the right to initiate the proceedings for a tolerance on that chemical by filing a petition. Second, the bill provides for the initial setting of tolerances without a formal public hearing, limiting such hearings to issues which may remain in dispute at the conclusion of the informal proceedings. Existing law requires a formal public hearing before any tolerance can be established and such a proceeding can be initiated only upon the request of a substantial segment of the industry or upon the initiative of the Government.

7. Where the informal procedures do not produce a satisfactory tolerance or exemption the rights of all concerned to a full and fair hearing on the disputed issues are preserved.

8. Enforcement of the adulteration provisions relating to raw agricultural commodities bearing pesticide chemicals is simplified and made more effective, since, under the bill, authority to establish tolerances extends to pesticide chemicals not generally recognized, among experts qualified by scientific training and experience to evaluate the safety of pesticide chemicals, as safe for use, as well as pesticide chemicals which are known to be poisonous or deleterious.

9. Provision is made for the exemption of pesticide chemicals from the requirements of a tolerance in cases where tolerances are not necessary to protect the public health and for the establishment of temporary tolerances for those pesticide chemicals which are used in or on raw agricultural commodities under experimental permits issued by the Department of Agriculture. There are no provisions for such exemptions or temporary tolerances in the present law.

EXPLANATION OF THE BILL BY SECTIONS

An explanation of the various provisions of the bill is contained in the sectional analysis which follows.

Section 1

This section contains definitions of the terms "pesticide chemical" and "raw agricultural commodity". These terms are not used in the present law. The term "pesticide chemical" is defined to include any substance which, alone, in chemical combination or in formulation with other substances, is an "economic poison" within the meaning of the Federal Insecticide, Fungicide and Rodenticide Act (7 U. S. C. secs. 135–135h), which is used in the production, storage, or transportation of raw agricultural commodities. The term "raw agricultural commodity" is defined to include any food in its raw or natural state, including fruits that are washed, colored, or otherwise treated in their unpeeled natural form prior to marketing.

It is intended by these definitions to draw a sharp line of distinction between the subjects covered by this bill and the subjects which are unaffected by it. This bill covers the regulations of the residue from pesticide chemicals which may remain in or on food in its raw or natural state as usually purchased by the consumer or the food processor. Such food would include fresh fruits and vegetables, grains, nuts, eggs, and milk and similar agricultural produce grown or produced at the farm level. It would also include those foods which have been subjected to certain customary postharvest treatment prior to marketing, such as the washing or coloring of fruits in their unpeeled natural form, the stripping of the outer leaves of lettuce, and the preparation of fresh green salads. This bill does not attempt to regulate the residue from pesticide chemicals which may remain in or on processed, fabricated, or manufactured food other than by limiting the permissible residues on raw agricultural commodities. Food processed by operations such as cooking, freezing, dehydration, or milling would remain subject to section 406 rather than being regulated by this bill. For example, the provisions of this bill would apply to the residue of DDT remaining in or on fresh apples or apples which are washed or waxed for market. The provisions of this bill would not apply to any residue of DDT remaining in or on applejuice or applesauce which may be prepared or produced from such apples.

The term "pesticide chemical" has been selected in order to make it clear that tolerances (or exemptions) under this bill are to be established with reference to the poisonous, deleterious, or inadequately tested ingredients of a formulated "economic poison" rather than with reference to the formulated or finished product itself. For example, in a finished product containing DDT a tolerance under this bill would be established for DDT rather than for the finished product itself.

Section 2

The Federal Food, Drug, and Cosmetic Act (in sec. 301 (a)) prohibits the shipment in interstate commerce of adulterated food.

Under section 402 (a) (2), a food is deemed to be adulterated if it bears or contains any "added" poisonous or deleterious substance which is "unsafe" within the meaning of section 406 of the act. Section 406 contains a general declaration that any poisonous or deleterious substance added to food is unsafe except where the substance is "required in the production thereof and cannot be avoided by good manufacturing practice." However, in any case where such a substance is so required or cannot be so avoided (and this is so in case of the use of pesticide chemicals in the production of most raw agricultural commodities), section 406 directs the Secretary of Health, Education, and Welfare to promulgate regulations limiting the quantity on the food to such extent as such Secretary finds to be necessary for protection of the public health.

As explained elsewhere in this report, the primary purpose of this legislation is to provide a new method, and new procedures, for regulating the amount of pesticide chemical residue which shall be permitted to remain in or on raw agricultural commodities.

To attain this objective, section 2 of the bill amends section 402 (a) (2) so as to provide, in the case of any raw agricultural commodity bearing or containing a pesticide chemical, that such commodity shall be deemed to be adulterated if such pesticide chemical is unsafe within the meaning of the new section 408 (a) which is being added to the law by section 3 of the bill. Thus, section 406 of the law will no longer be applicable in the case of raw agricultural commodities bearing or containing pesticide chemicals.

Section 3

This section amends chapter IV of the present law by adding a new section 408. This section would supplant section 406 insofar as the residues of pesticide chemicals remaining in or on raw agricultural commodities are concerned.

Section 408 (a).—This subsection specifies the conditions under which a pesticide chemical is deemed unsafe within the meaning of the adulteration provision in section 402 (a) (2). Under this subsection, the residue of a poisonous or deleterious pesticide chemical or a pesticide chemical which is not generally recognized as safe is deemed unsafe if no tolerance or exemption has been established for it, or, in the event that a tolerance has been established, if the quantity of the residue exceeds the tolerance.

Section 408 (b).—This subsection gives to the Secretary of Health, Education, and Welfare the authority to establish tolerances. The subsection also sets forth the principal factors which should guide the administrative judgment in taking such action. The factors are designed to assure a proper balance between the need for protecting the consumer and the need for assuring an adequate, wholesome, and economical food supply. The Secretary is authorized to establish the tolerance at zero level in cases where a higher tolerance is not justified by the scientific data.

Section 408 (c).—This subsection authorizes the establishment of regulations exempting pesticide chemicals from the requirements of a tolerance where a quantitative restriction on the residue of such a chemical is not necessary.

Section 408 (d).—This subsection prescribes the procedure for establishing tolerances or exemptions pursuant to a petition.

Paragraph (1) of this subsection sets forth who may file a petition, initiating the regulatory process and the type of data which is to be contained in the petition.

A petition may be filed only by a person who has registered or who has submitted an application for registration under the Federal Insecticide, Fungicide, and Rodenticide Act for an economic poison containing the pesticide chemical for which the tolerance or exemption is sought. It is intended by this provision to limit the class of persons who may file a petition to those who are in the best position to develop and present the type of scientific data which are necessary for the exercise of sound administrative judgment.

The data to be contained in a petition include information about the pesticide chemical, how it is to be used, full reports of investigations made with respect to the safety of the pesticide chemical, the results of tests on the amount of residue remaining, including a description of the analytical methods used, practicable methods for removing the residue which exceeds any proposed tolerance, together with a proposed tolerance and reasonable grounds to support the petition.

It is intended that a rule of reason should dictate the nature and extent of the information which should be submitted with a petition. What is contemplated is data adequate to permit an accurate appraisal of safety to protect the public health. In this respect the data as to a particular chemical will depend upon many variable factors, including its physical and chemical properties, recommended purpose, toxicity, and rate of disappearance. The emphasis to be placed on any such factor will similarly depend on the particular pesticide chemical under consideration and its proposed usage. In some cases it is to be expected that, despite extensive research, completely satisfactory analytical methods or methods or residue removal may not be available. Where satisfactory chemical methods have not been developed, reliable bioassay methods or other reliable methods may be used in lieu of, or in combination with, chemical methods to identify and measure the residue. It is understood that data as to practicable methods for removing residue are required only in cases where the residue would otherwise exceed the proposed tolerance.

Paragraphs (2), (3), and (4) set forth the informal procedure to be followed by the Secretary of Health, Education, and Welfare in establishing tolerances or exemptions in cases where a petition is filed. This procedure contemplates an informal rulemaking process after the filing of a petition to enable prompt admin-

istrative action, to obviate unnecessary public hearings, and to minimize the issues where hearings are necessary.

Paragraph (2) provides that the Secretary shall establish a tolerance or exemption for a pesticide chemical for which a petition for a tolerance or exemption is filed within 90 days after the Secretary of Agriculture has certified that the pesticide chemical is useful pursuant to subsection (1). Paragraph (3) provides for a variation in this procedure when the petition is referred to an advisory committee.

Paragraph (3) sets forth the procedure for referring a petition to an advisory committee. Under this, the petitioner may within 90 days after filing a petition request reference to an advisory committee or the Secretary may cause such referral upon his own initiative. If such a request or referral is made, the advisory committee is selected and appointed in accordance with subsection (g). The advisory committee, after a study of the petition and all other data before it, would certify a report and recommendations, together with all underlying data and a statement of the reasons or basis for the recommendation, to the Secretary within 60 days after the referral (or within 90 days if extended for good cause). The Secretary would then establish the tolerance or exemption after having taken into consideration the report and recommendations of the advisory committee.

Paragraph (4) provides that regulations establishing such tolerances or exemptions become effective upon publication in the Federal Register.

Paragraph (5) sets forth the procedure for obtaining and holding public hearings on tolerances or exemption regulations which are initially promulgated upon the basis of the informal process contemplated under paragraphs (2) and (3). This paragraph provides for a formal rulemaking hearing but only on those parts of tolerance or exemption regulations to which objection is made. Any "adversely affected" person is given the opportunity to file objections and request a public hearing. This would include such persons as the person filing the petition, a food processor or food manufacturer, or a grower using the pesticide chemical. The person filing the petition is authorized to reply to the objections, whereupon the hearing is held. Specific provision is made whereby the report of an advisory committee may be introduced into evidence at such hearing subject to section 7 (c) of the Administrative Procedure Act. In the event that cross-examination of such report is necessary for full and true disclosure of the facts under section 7 (c), provision is made for a member of the advisory committee to attend and testify at the hearing with respect to the report and underlying data. This should not be construed to deny the right of any member of an advisory committee to so attend or testify with regard to the majority report of the committee or to a minority report if there is one. Section 7 (c) also would authorize evidence in rebuttal of the report. Regulations resulting from such hearing, which are to be issued as soon as practicable after the hearing, must be based upon detailed findings and substantial evidence of record.

Section 408 (e).—This subsection prescribes a procedure whereby the Secretary of Health, Education, and Welfare may propose a tolerance or exemption regulation upon his own initiative or upon the request of an interested person. It is anticipated that in the case of new pesticides, tolerance or exemption regulations will be initiated by petition under subsection (d) rather than under the provisions of this subsection.

Section 408 (f).—This subsection provides that data submitted to the Secretary and to advisory committees in support of a petition are deemed confidential until publication of a regulation based thereon under (2) or (3) of subsection (d). This provision is designed to assure equitable protection to research information until the time when regulations are published for public comment and possible formal hearings.

Section 408 (g).—This subsection specifies the manner in which the ad hoc advisory committees are selected and appointed and the qualifications of members serving on such committees. This is one of the key provisions of the bill which enables a study of proposed tolerances or exemptions by impartial scientific experts of diversified professional backgrounds who will be able to bring to bear on the administrative process the results of particular experience and expertise in the field. The recommendations of these groups will obviously be most carefully considered and will constitute an important part of the scientific evidence. Under this bill, advisory committees will be appointed by the Secretary of Health, Education, and Welfare and the members thereof will be selected by the National Academy of Sciences. In making the selection, the Academy will be guided by the qualification standards specified in the bill which emphasize the need for

experts of diversified experience and background, including experts drawn from the agricultural field. It is intended that the Academy will select the land-grant college representative or representatives on the basis of recommendations made by the Association of Land-Grant Colleges and Universities. Provision is made whereby the Secretary of Health, Education, and Welfare may prescribe general rules pertaining to the operations of advisory committees. It is not intended that such rules should impair the basic flexibility and independence of action which will be necessary to the proper functioning of the advisory committees under this bill.

Section 408 (h).—This subsection is designed to make it clear that the proponent of a tolerance or exemption regulation or his representative and the Secretary of Health, Education, and Welfare have the unqualified right to consult with an advisory committee.

Section 408 (i). This subsection provides for judicial review in the United States courts of appeals of orders of the Secretary of Health, Education, and Welfare establishing tolerance or exemption regulations and of orders of the Secretary of Agriculture with respect to certifications of usefulness. Review is available in any case of "actual controversy" to any person who will be adversely affected by tolerance or exemption regulations or by a certification as to agricultural usefulness. The bill does not restrict review to participants in the administrative hearing. The nature of judicial review provided is the same as that provided for in section 10 of the Administrative Procedure Act as interpreted in *Universal Camera Corp* v. *National Labor Relations Board* (340 U. S. 474) and applied with respect to section 701 (f) of the present Federal Food, Drug, and Cosmetic Act. Specific provision is made for consideration by the courts of any report and recommendation of an advisory committee properly presented at the public hearing.

Section 408 (j).—This subsection provides for the establishment of temporary tolerances for pesticide chemicals used on experimental permits in accordance with the provisions of the Federal Insecticide, Fungicide, and Rodenticide Act.

Section 408 (k).—This subsection saves the effectiveness of tolerance regulations which may be promulgated under the authority of section 406 (a) upon the basis of public hearings initiated before January 1, 1953 (this embraces at the present time only those initiated in 1950 for fresh fruits and vegetables). These regulations would be subject to amendment and repeal under the provisions of this bill.

Section 408 (l).—This subsection sets forth the functions of the Secretary of Agriculture under the bill. Under the present law the Secretary of Agriculture has no responsibility in the setting of tolerances by the Secretary of Health, Education, and Welfare. Agricultural usage and the necessity for using pesticide chemicals in agriculture as well as questions of safety are determined by the Secretary of Health, Education, and Welfare under the present law. This bill imposes upon the Secretary of Agriculture the function of (*a*) determining the usefulness of a pesticide chemical in agriculture, and (*b*) stating an opinion whether a proposed tolerance or exemption reasonably reflects the residue which is likely to result when the pesticide chemical is used as proposed. In this respect, generally recognized and accepted good agricultural practices which normally eliminate or minimize residue may be taken into account in establishing tolerances. The bill delegates to the Secretary of Health, Education, and Welfare the function of determining safe residue limits from the standpoint of the food consumer.

Under this procedure, a person who is qualified to file a petition for a tolerance or exemption may request the Secretary of Agriculture to make, for example, a certification to the Secretary of Health, Education, and Welfare that the pesticide chemical named in the petition is useful in controlling insects or other pests which affect specified raw agricultural commodities for which the tolerance or exemption is sought. After study of the data before him, the Secretary of Agriculture may make the certification as proposed or give the person requesting the certification the opportunity for a formal hearing based on a record and stated findings. Tolerances or exemptions would not be established by the Secretary of Health, Education, and Welfare until after a certification of usefulness was made. Each certification of usefulness must be accompanied by an opinion by the Secretary of Agriculture whether the proposed tolerance reasonably reflects the amount of residue which may be expected when used as proposed. The Secretary of Agriculture is also given the exclusive authority under the bill to promulgate regulations implementing the provisions of this subsection.

Since tolerances may be set and exemptions made under the bill only in the case of those pesticide chemicals which the Secretary of Agriculture certifies as "useful," the meaning of this term is important. On March 10, 1954, the Under Secretary of Agriculture, in writing to the chairman of this committee, attached a statement of views regarding the meaning of the term "useful" as it is employed in section 48 (1) of the bill. He stated that it represents the views of representatives of the industry and the Department of Agriculture. This statement is set forth below. The committee has not been informed of any disagreement with the views therein expressed.

"Another important interpretative question which is presented is the legislative meaning of the term 'useful' as it is employed in the bill. This term is an important one since tolerances are set and exemptions are made only on those pesticides which the Secretary of Agriculture certifies to be 'useful for the purposes for which a tolerance or exemption is sought.'

"Usefulness of a pesticide chemical for the purpose of certification under H. R. 7125 should be determined upon the basis of its practical biological or pesticidal effectiveness. Pesticidal effectiveness may be established in terms of percentage reduction or control of pests or, when appropriate, increase in yield or quality of crop or other economic gain or practical benefit following application of the specified pesticide under the conditions prescribed, compared with results from adequate controls. In determining practical effectiveness, consideration may be given to other economic gain or practical benefit including: economy or ease of production, harvest, or storage of the crop; flexibility as regards time of planting or harvest, even at the possible sacrifice of yield; and general benefit to livestock, plants, or human welfare not necessarily related to yield.

"One of the purposes of this bill is to expedite the setting of tolerances with a minimum of delay and without undue burden upon the administrative agencies involved. To minimize the need for repeated certifications and setting of tolerances for specific uses of a pesticide chemical as they are established, certification should be on as broad a basis as the data submitted to the Secretary of Agriculture warrant. Thus, when the petitioner submits data showing that a pesticide chemical is effective against one or more pests common to fresh fruits, if the petitioner so requests, the chemical should be certified as useful on fresh fruits for the purpose of establishing a tolerance thereon even though it has not been tested on all fresh fruits, providing the data reasonably indicate that it will be effective on a wide variety of fresh fruits.

"Factors other than pesticidal effectiveness are considered in the granting of registration under the Federal Insecticide, Fungicide, and Rodenticide Act of 1947. Many of these factors have no relation to the subject matter of this bill which is concerned with the protection of the public health and the setting of tolerances. It is not intended that the criteria for registration be applied to the certification of usefulness. Such certification should be made by the Secretary of Agriculture upon the establishment of pesticidal effectiveness unless available information indicates that the pesticide chemical is unacceptable for registration as regards the proposed food use."

It is to be noted that the functions of the Secretary of Agriculture under this bill are in addition to those prescribed for the administration and enforcement of the Federal Insecticide, Fungicide, and Rodenticide Act, which is a premarketing control over economic poisons containing pesticide chemicals. Nothing in this bill is intended to change or modify in any way that act and the interpretations thereunder.

Section 408 (m).—This subsection makes provision for the establishment of implementing rules and regulations prescribing the manner in which tolerance and exemption rules may be amended or repealed. The bill contemplates that such regulations will be made in the manner prescribed in section 4 of the Administrative Procedure Act. It is intended that public hearings should be held on important regulations and that a minimum of 60 days should be allowed for the submission of views by interested persons before the adoption of a proposed regulation as final.

Section 408 (n).—This subsection is designed to make it clear that section 303 (c) of the present law relating to guaranties is applicable to this bill. It is not intended to change or modify in any way the guaranty provisions of the present law.

Section 4

This section contains the usual authorizations for appropriations for the administration of the bill.

Section 5

This section specifies the time when the provisions of this bill become effective. It provides for the effectiveness upon enactment of all provisions of this bill except section 2. Section 2 would not become effective as to any pesticide chemical for which a tolerance or exemption were not established under section 3 for a period ranging from a minimum of 1 year to a maximum of 2 years after enactment of this bill. This period is for the purpose of providing sufficient time for the new procedure prescribed in section 3 for establishing tolerances to function as to all affected pesticide chemicals.

CHANGES IN EXISTING LAW

In compliance with clause 3 of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as introduced, are shown as follows (new matter is printed in italics, existing law in which no change is proposed is shown in roman):

FEDERAL FOOD, DRUG, AND COSMETIC ACT

CHAPTER I—SHORT TITLE

SECTION 1. This Act may be cited as the Federal Food, Drug, and Cosmetic Act.

CHAPTER II—DEFINITIONS

SEC. 201. For the purposes of this Act—

(a) The term "Territory" means any Territory or possession of the United States, including the District of Columbia and excluding the Canal Zone.

(b) The term "interstate commerce" means (1) commerce between any State or Territory and any place outside thereof, and (2) commerce within the District of Columbia or within any other Territory not organized with a legislative body.

(c) The term "Department" means the U. S. Department of Health, Education, and Welfare.

(d) The term "Secretary" means the Secretary of Health, Education, and Welfare.

(e) The term "person" includes individual, partnership, corporation, and association.

(f) The term "food" means (1) articles used for food or drink for man or other animals, (2) chewing gum, and (3) articles used for components of any such article.

(g) The term "drug" means (1) articles recognized in the official United States Pharmacopoeia, official Homoeopathic Pharmacopoeia of the United States, or official National Formulary, or any supplement to any of them; and (2) articles intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in man or other animals; and (3) articles (other than food) intended to affect the structure or any function of the body of man or other animals; and (4) articles intended for use as a component of any articles specified in clause (1), (2), or (3); but does not include devices or their components, parts, or accessories.

(h) The term "device" (except when used in paragraph (n) of this section and in sections 301 (i), 403 (f), 502 (c), and 602 (c)) means instruments, apparatus, and contrivances, including their components, parts, and accessories, intended (1) for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in man or other animals; or (2) to affect the structure or any function of the body of man or other animals.

(i) The term "cosmetic" means (1) articles intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body or any part thereof for cleansing, beautifying, promoting attractiveness, or altering the appearance, and (2) articles intended for use as a component of any such articles; except that such term shall not include soap.

(j) The term "official compendium" means the official United States Pharmacopoeia, official Homoeopathic Pharmacopoeia of the United States, official National Formulary, or any supplement to any of them.

(k) The term "label" means a display of written, printed, or graphic matter upon the immediate container of any article; and a requirement made by or under

authority of this Act that any word, statement, or other information appear on the label shall not be considered to be complied with unless such word, statement, or other information also appears on the outside container or wrapper, if any there be, of the retail package of such article, or is easily legible through the outside container or wrapper.

(l) The term "immediate container" does not include package liners.

(m) The term "labeling" means all labels and other written, printed, or graphic matter (1) upon any article or any of its containers or wrappers, or (2) accompanying such article.

(n) If an article is alleged to be misbranded because the labeling is misleading, then in determining whether the labeling is misleading there shall be taken into account (among other things) not only representations made or suggested by statement, word, design, device, or any combination thereof, but also the extent to which the labeling fails to reveal facts material in the light of such representations or material with respect to consequences which may result from the use of the article to which the labeling relates under the conditions of use prescribed in the labeling thereof or under such conditions of use as are customary or usual.

(o) The representation of a drug, in its labeling, as an antiseptic shall be considered to be a representation that it is a germicide, except in the case of a drug purporting to be, or represented as, an antiseptic for inhibitory use as a wet dressing, ointment, dusting powder, or such other use as involves prolonged contact with the body.

(p) The term "new drug" means—

(1) Any drug the composition of which is such that such drug is not generally recognized, among experts qualified by scientific training and experience to evaluate the safety of drugs, as safe for use under the conditions prescribed, recommended, or suggested in the labeling thereof, except that such a drug not so recognized shall not be deemed to be a "new drug" if at any time prior to the enactment of this Act it was subject to the Food and Drugs Act of June 30, 1906, as amended, and if at such time its labeling contained the same representations concerning the conditions of its use; or

(2) Any drug the composition of which is such that such drug, as a result of investigations to determine its safety for use under such conditions, has become so recognized, but which has not, otherwise than in such investigations, been used to a material extent or for a material time under such conditions.

(q) The term "pesticide chemical" means any substance which, alone, in chemical combination or in formulation with one or more other substances, is an "economic poison" within the meaning of the Federal Insecticide, Fungicide, and Rodenticide Act (7 U. S. C., secs. 135–135k) as now in force or as hereafter amended, and which is used in the production, storage, or transportation of raw agricultural commodities.

(r) The term "raw agricultural commodity" means any food in its raw or natural state, including all fruits that are washed, colored, or otherwise treated in their unpeeled natural form prior to marketing.

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CHAPTER IV—FOOD

DEFINITIONS AND STANDARDS FOR FOOD

SEC. 401. Whenever in the judgment of the Secretary such action will promote honesty and fair dealing in the interest of consumers, he shall promulgate regulations fixing and establishing for any food, under its common or usual name so far as practicable, a reasonable definition and standard of identity, a reasonable standard of quality, and/or reasonable standards of fill of container: *Provided*, That no definition and standard of identity and no standard of quality shall be established for fresh or dried fruits, fresh or dried vegetables, or butter, except that definitions and standards of identity may be established for avocados, cantaloupes, citrus fruits, and melons. In prescribing any standard of fill of container, the Secretary shall give due consideration to the natural shrinkage in storage and in transit of fresh natural food and to need for the necessary packing and protective material. In the prescribing of any standard of quality for any canned fruit or canned vegetable, consideration shall be given and due allowance made for the differing characteristics of the several varieties of such fruit or vegetable. In prescribing a definition and standard of identity for any food or class of food in which optional ingredients are permitted, the Secretary shall, for the purpose of promoting honesty and fair dealing in the interest of consumers,

designate the optional ingredients which shall be named on the label. Any definition and standard of identity prescribed by the Secretary for avocados, cantaloupes, citrus fruits, or melons shall relate only to maturity and to the effects of freezing.

ADULTERATED FOOD

SEC. 402. A food shall be deemed to be adulterated—

(a) (1) If it bears or contains any posisonous or deleterious substance which may render it injurious to health; but in case the substance is not an added substance such food shall not be considered adulterated under this clause if the quantity of such substance in such food does not ordinarily render it injurious to health; or (2) if it bears or contains any added poisonous or added deleterious substance, *except a pesticide chemical in or on a raw agricultural commodity*, which is unsafe within the meaning of section 406, *or if it is a raw agricultural commodity and it bears or contains a pesticide chemical which is unsafe within the meaning of section 408 (a)*; or (3) if it consists in whole or in part of any filthy, putrid, or decomposed substance, or if it is otherwise unfit for food; or (4) if it has been prepared, packed, or held under insanitary conditions whereby it may have become contaminated with filth, or whereby it may have been rendered injurious to health; or (5) if it is, in whole or in part, the product of a diseased animal or of an animal which has died otherwise than by slaughter; or (6) if its container is composed, in whole or in part, of any poisonous or deleterious substance which may render the contents injurious to health.

(b) (1) If any valuable constituent has been in whole or in part omitted or abstracted therefrom; or (2) if any substance has been substituted wholly or in part therefor; or (3) if damage or inferiority has been concealed in any manner; or (4) if any substance has been added thereto or mixed or packed therewith so as to increase its bulk or weight, or reduce its quality or strength, or make it appear better or of greater value than it is.

(c) If it bears or contains a coal-tar color other than one from a batch that has been certified in accordance with regulations as provided by section 406: *Provided*, That this paragraph shall not apply to citrus fruit bearing or containing a coal-tar color if application for listing of such color has been made under this Act and such application has not been acted on by the Secretary, if such color was commonly used prior to the enactment of this Act for the purpose of coloring citrus fruit.

(d) If it is confectionery, and it bears or contains any alcohol or nonnutritive article or substance except harmless coloring, harmless flavoring, harmless resinous glaze not in excess of four-tenths of 1 per centum, natural gum, and pectin: *Provided*, That this paragraph shall not apply to any confectionery by reason of its containing less than one-half of 1 per centum by volume of alcohol derived solely from the use of flavoring extracts, or to any chewing gum by reason of its containing harmless nonnutritive masticatory substances.

(e) If it is oleomargarine or margarine or butter and any of the raw material used therein consisted in whole or in part of any filthy, putrid, or decomposed substance, or such oleomargarine or margarine or butter is otherwise unfit for food.

MISBRANDED FOOD

SEC. 403. A food shall be deemed to be misbranded—

(a) If its labeling is false or misleading in any particular.

(b) If it is offered for sale under the name of another food.

(c) If it is an imitation of another food, unless its label bears, in type of uniform size and prominence, the word "imitation" and, immediately thereafter, the name of the food imitated.

(d) If its container is so made, formed, or filled as to be misleading.

(e) If in package form unless it bears a label containing (1) the name and place of business of the manufacturer, packer, or distributor; and (2) an accurate statement of the quantity of the contents in terms of weight, measure, or numerical count: *Provided*, That under clause (2) of this paragraph reasonable variations shall be permitted, and exemptions as to small packages shall be established, by regulations prescribed by the Secretary.

(f) If any word, statement, or other information required by or under authority of this Act to appear on the label or labeling is not prominently placed thereon with such conspicuousness (as compared with other words, statements, designs, or devices, in the labeling) and in such terms as to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use.

(g) If it purports to be or is represented as a food for which a definition and standard of identity has been prescribed by regulations as provided by section 401, unless (1) it conforms to such definition and standard, and (2) its label bears the name of the food specified in the definition and standard, and, insofar as may be required by such regulations, the common names of optional ingredients (other than spices, flavoring, and coloring) present in such food.

(h) If it purports to be or is represented as—

(1) a food for which a standard of quality has been prescribed by regulations as provided by section 401, and its quality falls below such standard, unless its label bears, in such manner and form as such regulations specify, a statement that it falls below such standard; or

(2) a food for which a standard or standards of fill of container have been prescribed by regulations as provided by section 401, and it falls below the standard of fill of container applicable thereto, unless its label bears, in such manner and form as such regulations specify, a statement that it falls below such standard.

(i) If it is not subject to the provisions of paragraph (g) of this section unless its label bears (1) the common or usual name of the food, if any there be, and (2) in case it is fabricated from two or more ingredients, the common or usual name of each such ingredient; except that spices, flavorings, and colorings, other than those sold as such, may be designated as spices, flavorings, and colorings without naming each: *Provided*, That, to the extent that compliance with the requirements of clause (2) of this paragraph is impracticable, or results in deception or unfair competition, exemptions shall be established by regulations promulgated by the Secretary.

(j) If it purports to be or is represented for special dietary uses, unless its label bears such information concerning its vitamin, mineral, and other dietary properties as the Secretary determines to be, and by regulations prescribes as, necessary in order fully to inform purchasers as to its value for such uses.

(k) If it bears or contains any artificial flavoring, artificial coloring, or chemical preservative, unless it bears labeling stating that fact: *Provided*, That to the extent that compliance with the requirements of this paragraph is impracticable, exemptions shall be established by regulations promulgated by the Secretary. The provisions of this paragraph and paragraphs (g) and (i) with respect to artificial coloring shall not apply in the case of butter, cheese, or ice cream.

EMERGENCY PERMIT CONTROL

SEC. 404. (a) Whenever the Secretary finds after investigation that the distribution in interstate commerce of any class of food may, by reason of contamination with micro-organisms during the manufacture, processing, or packing thereof in any locality, be injurious to health, and that such injurious nature cannot be adequately determined after such articles have entered interstate commerce, he then, and in such case only, shall promulgate regulations providing for the issuance, to manufacturers, processors or packers of such class of food in such locality, of permits to which shall be attached such conditions governing the manufacture, processing, or packing of such class of food, for such temporary period of time, as may be necessary to protect the public health; and after the effective date of such regulations, and during such temporary period, no person shall introduce or deliver for introduction into interstate commerce any such food manufactured, processed, or packed by any such manufacturing processor, or packer unless such manufacturer, processor, or packer holds a permit issued by the Secretary as provided by such regulations.

(b) The Secretary is authorized to suspend immediately upon notice any permit issued under authority of this section if it is found that any of the conditions of the permit have been violated. The holder of a permit so suspended shall be privileged at any time to apply for the reinstatement of such permit, and the Secretary shall, immediately after prompt hearing and an inspection of the establishment, reinstate such permit if it is found that adequate measures have been taken to comply with and maintain the conditions of the permit, as originally issued or as amended.

(c) Any officer or employee duly designated by the Secretary shall have access to any factory or establishment, the operator of which holds a permit from the Secretary, for the purpose of ascertaining whether or not the conditions of the permit are being complied with, and denial of access for such inspection shall be ground for suspension of the permit until such access is freely given by the operator.

REGULATIONS MAKING EXEMPTIONS

SEC. 405. The Secretary shall promulgate regulations exempting from any labeling requirement of this Act (1) small open containers of fresh fruits and fresh vegetables and (2) food which is, in accordance with the practice of the trade, to be processed, labeled, or repacked in substantial quantities at establishments other than those where originally processed or packed, on condition that such food is not adulterated or misbranded under the provisions of this Act upon removal from such processing, labeling, or repacking establishment.

TOLERANCES FOR POISONOUS INGREDIENTS IN FOOD AND CERTIFICATION OF COAL-TAR COLORS FOR FOOD

SEC. 406. (a) Any poisonous or deleterious substance added to any food, except where such substance is required in the production thereof or cannot be avoided by good manufacturing practice shall be deemed to be unsafe for purposes of the application of clause (2) of section 402 (a); but when such substance is so required or cannot be so avoided, the Secretary shall promulgate regulations limiting the quantity therein or thereon to such extent as he finds necessary for the protection of public health, and any quantity exceeding the limits so fixed shall also be deemed to be unsafe for purposes of the application of clause (2) of section 402 (a). While such a regulation is in effect limiting the quantity of any such substance in the case of any food, such food shall not, by reason of bearing or containing any added amount of such substance, be considered to be adulterated within the meaning of clause (1) of section 402 (a). In determining the quantity of such added substance to be tolerated in or on different articles of food the Secretary shall take into account the extent to which the use of such substance is required or cannot be avoided in the production of each such article, and the other ways in which the consumer may be affected by the same or other poisonous or deleterious substances.

(b) The Secretary shall promulgate regulations providing for the listing of coal-tar colors which are harmless and suitable for use in food and for the certification of batches of such colors, with or without harmless diluents.

COLORED OLEOMARGARINE

SEC. 407. (a) Colored oleomargarine or colored margarine which is sold in the same State or Territory in which it is produced shall be subject in the same manner and to the same extent to the provisions of this Act as if it had been introduced in interstate commerce.

(b) No person shall sell, or offer for sale, colored oleomargarine or colored margarine unless—

(1) such oleomargarine or margarine is packaged,

(2) the net weight of the contents of any package sold in a retail establishment is one pound or less,

(3) there appears on the label of the package (A) the word "oleomargarine" or "margarine" in type or lettering at least as large as any other type or lettering on such label, and (B) a full and accurate statement of all the ingredients contained in such oleomargarine or margarine, and

(4) each part of the contents of the package is contained in a wrapper which bears the word "oleomargarine" or "margarine" in type or lettering not smaller than 20-point type.

The requirements of this subsection shall be in addition to and not in lieu of any of the other requirements of this Act.

(c) No person shall possess in a form ready for serving colored oleomargarine or colored margarine at a public eating place unless a notice that oleomargarine or margarine is served is displayed prominently and conspicuously in such place and in such manner as to render it likely to be read and understood by the ordinary individual being served in such eating place or is printed or is otherwise set forth on the menu in type or lettering not smaller than that normally used to designate the serving of other food items. No person shall serve colored oleomargarine or colored margarine at a public eating place, whether or not any charge is made therefor, unless (1) each separate serving bears or is accompanied by labeling identifying it as oleomargarine or margarine, or (2) each separate serving thereof is triangular in shape.

(d) Colored oleomargarine or colored margarine when served with meals at a public eating place shall at the time of such service be exempt from the labeling requirements of section 403 (except (a) and 403 (f)) if it complies with the requirements of subsection (b) of this section.

(e) For the purpose of this section colored oleomargarine or colored margarine is oleomargarine or margarine having a tint or shade containing more than one and six-tenths degrees of yellow, or of yellow and red collectively, but with an excess of yellow over red, measured in terms of Lovibond tintometer scale or its equivalent.

TOLERANCES FOR PESTICIDE CHEMICALS IN OR ON RAW AGRICULTURAL COMMODITIES

Sec. 408. (a) Any poisonous or deleterious pesticide chemical, or any pesticide chemical which is not generally recognized, among experts qualified by scientific training and experience to evaluate the safety of pesticide chemicals, as safe for use, added to a raw agricultural commodity, shall be deemed unsafe for the purposes of the application of clause (2) of section 402 (a) unless—

(1) a tolerance for such pesticide chemical in or on the raw agricultral commodity has been prescribed by the Secretary of Health, Education, and Welfare under this section and the quantity of such pesticide chemical in or on the raw agricultural commodity is within the limits of the tolerance so prescribed; or

(2) with respect to use in or on such raw agricultural commodity, the pesticide chemical has been exempted from the requirement of a tolerance by the Secretary under this section.

While a tolerance or exemption from tolerance is in effect for a pesticide chemical with respect to any raw agricultural commodity, such raw agricultural commodity shall not, by reason of bearing or containing any added amount of such pesticide chemical, be considered to be adulterated within the meaning of clause (1) of section 402 (a).

(b) The Secretary shall promulgate regulations establishing tolerances with respect to the use in or on raw agricultural commodities of poisonous or deleterious pesticide chemicals and of pesticide chemicals which are not generally recognized, among experts qualified by scientific training and experience to evaluate the safety of pesticide chemicals, as safe for use, to the extent necessary to protect the public health. In establishing any such regulation, the Secretary shall give appropriate consideration, among other relevant factors, (1) to the necessity for the production of an adequate, wholesome, and economical food supply; (2) to the other ways in which the consumer may be affected by the same pesticide chemical or by other related substances that are poisonous or deleterious; and (3) to the opinion of the Secretary of Agriculture as submitted with a certification of usefulness under subsection (l) of this section. Such regulations shall be promulgated in the manner prescribed in subsection (d) or (e) of this section. In carrying out the provisions of this section relating to the establishment of tolerances, the Secretary may establish the tolerance applicable with respect to the use of any pesticide chemical in or on any raw agricultural commodity at zero level if the scientific data before the Secretary does not justify the establishment of a greater tolerance.

(c) The Secretary shall promulgate regulations exempting any pesticide chemical from the necessity of a tolerance with respect to use in or on any or all raw agricultural commodities when such a tolerance is not necessary to protect the public health. Such regulations shall be promulgated in the manner prescribed in subsection (d) or (e) of this section.

(d) (1) Any person who has registered, or who has submitted an application for the registration of, an economic poison under the Federal Insecticide, Fungicide, and Rodenticide Act may file with the Secretary of Health, Education, and Welfare, a petition proposing the issuance of a regulation establishing a tolerance for a pesticide chemical which constitutes, or is an ingredient of, such economic poison, or exempting the pesticide chemical from a tolerance. The petition shall contain data showing—

(A) the name, chemical identity, and composition of the pesticide chemical;

(B) the amount, frequency, and time of application of the pesticide chemical;

(C) full reports of investigations made with respect to the safety of the pesticide chemical;

(D) the results of tests on the amount of residue remaining, including a description of the analytical methods used;

(E) practicable methods for removing residue which exceeds any proposed tolerance;

(F) proposed tolerances for the pesticide chemical if tolerances are proposed; and

(G) reasonable grounds in support of the petition.

Samples of the pesticide chemical shall be furnished to the Secretary upon request. Notice of the filing of such petition shall be published in general terms by the Secretary within thirty days after filing. Such notice shall include the analytical methods available for the determination of the residue of the pesticide chemcal for which a tolerance or exemption is proposed.

(2) Within ninety days after a certification of usefulness by the Secretary of Agriculture under subsection (l) with respect to the pesticide chemical named in the petition, the Secretary shall, after giving due consideration to the data submitted in the petition or otherwise before him, by order make public a regulation—

(A) establishing a tolerance for the pesticide chemical named in the petition for the purposes for which it is so certified as useful, or

(B) exempting the pesticide chemical from the necessity of a tolerance for such purposes,

unless within such ninety-day period the person filing the petition requests that the petition be referred to an advisory committee or the Secretary within such period otherwise deems such referral necessary, in either of which event the provisions of paragraph (3) of this subsection shall apply in lieu hereof.

(3) In the event that the person filing the petition requests, within ninety days after a certification of usefulness by the Secretary of Agriculture under subsection (l) with respect to the pesticide chemical named in the petition, that the petition be referred to an advisory committee, or the Secretary within such period otherwise deems such referral necessary, the Secretary shall forthwith submit the petition and other data before him to an advisory committee to be appointed in accordance with subsection (g) of this section. As soon as practicable after such referral, but not later than sixty days thereafter, unless extended as hereinafter provided, the committee shall, after independent study of the data submitted to it by the Secretary and other data before it, certify to the Secretary a report and recommendations on the proposal in the petition to the Secretary, together with all underlying data and a statement of the reasons or basis for the recommendations. The sixty-day period provided for herein may be extended by the advisory committee for an additional thirty days if the advisory committee deems this necessary. Within thirty days after such certification, the Secretary shall, after giving due consideration to all data then before him, including such report, recommendations, underlying data, and statement, by order make public a regulation—

(A) establishing a tolerance for the pesticide chemical named in the petition for the purposes for which it is so certified as useful; or

(B) exempting the pesticide chemical from the necessity of a tolerance for such purposes.

(4) The regulations published under paragraph (2) or (3) of this subsection will be effective upon publication.

(5) Within thirty days after publication, any person adversely affected by a regulation published pursuant to paragraph (2) or (3) of this subsection, or pursuant to subsection (e), may file objections thereto with the Secretary, specifying with particularity the provisions of the regulation deemed objectionable, stating reasonable grounds therefor, and requesting a public hearing upon such objections. A copy of the objections filed by a person other than the petitioner shall be served on the petitioner, if the regulation was issued pursuant to a petition. The petitioner shall have two weeks to make a written reply to the objections. The Secretary shall thereupon, after due notice, hold such public hearing for the purpose of receiving evidence relevant and material to the issues raised by such objections. Any report, recommendations, underlying data, and reasons certified to the Secretary by an advisory committee shall be made a part of the record of the hearing, if relevant and material, subject to the provisions of section 7 (c) of the Administrative Procedure Act (5 U. S. C., sec. 1006 (c)). The National Academy of Sciences shall designate a member of the advisory committee to appear and testify at any such hearing with respect to the report and recommendations of such committee upon request of the Secretary, the petitioner, or the officer conducting the hearing: Provided, That this shall not preclude any other member of the advisory committee from appearing and testifying at such hearing. As soon as practicable after completion of the hearing, the Secretary shall act upon such objections and by order make public a regulation. Such regulation shall be based only on substantial evidence of record at such hearing, including

any report, recommendations, underlying data, and reasons certified to the Secretary by an advisory committee, and shall set forth detailed findings of fact upon which the regulation is based. No such order shall take effect prior to the ninetieth day after its publication, unless the Secretary finds that emergency conditions exist necessitating an earlier effective date, in which event the Secretary shall specify in the order his findings as to such conditions.

(e) The Secretary may at any time, upon his own initiative or upon the request of any interested person, propose the issuance of a regulation establishing a tolerance for a pesticide chemical or exempting it from the necessity of a tolerance. Thirty days after publication of such a proposal, the Secretary may by order publish a regulation based upon the proposal which shall become effective upon publication unless within such thirty-day period a person, who has registered, or who has submitted an application for the registration of, an economic poison under the Federal Insecticide, Fungicide, and Rodenticide Act containing the pesticide chemical named in the proposal, requests that the proposal be referred to an advisory committee. In the event of such a request, the Secretary shall forthwith submit the proposal and other relevant data before him to an advisory committee to be appointed in accordance with subsection (g) of this section. As soon as practicable after such referral, but not later than sixty days thereafter, unless extended as hereinafter provided, the committee shall, after independent study of the data submitted to it by the Secretary and other data before it, certify to the Secretary a report and recommendations on the proposal together with all underlying data and a statement of the reasons or basis for the recommendations. The sixty-day period provided for herein may be extended by the advisory committee for an additional thirty days if the advisory committee deems this necessary. Within thirty days after such certification, the Secretary may, after giving due consideration to all data before him including such report, recommendations, underlying data and statement, by order publish a regulation establishing a tolerance for the pesticide chemical named in the proposal or exempting it from the necessity of a tolerance which shall become effective upon publication. Regulations issued under this subsection shall upon publication be subject to paragraph (5) or subsection (d).

(f) All data submitted to the Secretary or to an advisory committee in support of a petition under this section shall be considered confidential by the Secretary and by such advisory committee until publication of a regulation under paragraph (2) or (3) of subsection (d) of this section. Until such publication, such data shall not be revealed to any person other than those authorized by the Secretary or by an advisory committee in the carrying out of their official duties under this section.

(g) Whenever the referral of a petition or proposal to an advisory committee is requested under this section, or the Secretary otherwise deems such referral necessary the Secretary shall forthwith appoint a committee of competent experts to review the petition or proposal and to make a report and recommendations thereon. Each such advisory committee shall be composed of experts, qualified in the subject matter of the petition and of adequately diversified professional background selected by the National Academy of Sciences and shall include one or more representatives from land-grant colleges. The size of the committee shall be determined by the Secretary. Members of an advisory committee shall receive as compensation for their services a reasonable per diem, which the Secretary shall by rules and regulations prescribe, for time actually spent in the work of the committee, and shall in addition be reimbursed for their necessary traveling and subsistence expenses while so serving away from their places of residence. The members shall not be subject to any other provisions of law regarding the appointment and compensation of employees of the United States. The Secretary shall furnish the committee with adequate clerical and other assistance, and shall by rules and regulations prescribe the procedure to be followed by the committee.

(h) A person who has filed a petition or who has requested the referral of a proposal to an advisory committee in accordance with the provisions of this section, as well as representatives of the Department of Health, Education, and Welfare, shall have the right to consult with any advisory committee provided for in subsection (g) in connection with the petition or proposal.

(i) (1) In a case of actual controversy as to the validity of any order under subsection (d) (5), (e), or (l) any person who will be adversely affected by such order may obtain judicial review by filing in the United States Court of Appeals for the circuit wherein such person resides or has his principal place of business, or in the United States Court of Appeals for the District of Columbia

Circuit, within sixty days after the entry of such order, a petition praying that the order be set aside in whole or in part.

(2) In the case of a petition with respect to an order under subsection (d) (5) or (e), a copy of the petition shall be forthwith served upon the Secretary, or upon any officer designated by him for that purpose, and thereupon the Secretary, shall certify and file in the court a transcript of the proceedings and the record on which he based his order. Upon such filing, the court shall have exclusive jurisdiction to affirm or set aside the order complained of in whole or in part. The findings of the Secretary with respect to questions of fact shall be sustained if supported by substantial evidence when considered on the record as a whole, including any report and recommendation of an advisory committee.

(3) In the case of a petition with respect to an order under subsection (l), a copy of the petition shall be forthwith served upon the Secretary of Agriculture, or upon any officer designated by him for that purpose, and thereupon the Secretary shall certify and file in the court a transcript of the proceedings and the record on which he based his order. Upon such filing, the court shall have exclusive jurisdiction to affirm or set aside the order complained of in whole or in part. The findings of the Secretary with respect to questions of fact shall be sustained if supported by substantial evidence when considered on the record as a whole.

(4) If application is made to the court for leave to adduce additional evidence, the court may order such additional evidence to be taken before the Secretary of Health, Education, and Welfare or the Secretary of Agriculture, as the case may be, and to be adduced upon the hearing in such manner and upon such terms and conditions as to the court may seem proper, if such evidence is material and there were reasonable grounds for failure to adduce such evidence in the proceedings below. The Secretary of Health, Education, and Welfare or the Secretary of Agriculture, as the case may be, may modify his findings as to the facts and order by reason of the additional evidence so taken, and shall file with the court such modified findings and order.

(5) The judgment of the court affirming or setting aside, in whole or in part, any order under this section shall be final, subject to review by the Supreme Court of the United States upon certiorari or certification as provided in section 1254 of title 28 of the United States Code. The commencement of proceedings under this section shall not, unless specifically ordered by the court to the contrary, operate as a stay of an order. The courts shall advance on the docket and expedite the disposition of all causes filed therein pursuant to this section.

(j) The Secretary may, upon the request of any person who has obtained an experimental permit for a pesticide chemical under the Federal Insecticide, Fungicide, and Rodenticide Act or upon his own initiative, establish a temporary tolerance for the pesticide chemical for the uses covered by the permit whenever in his judgment such action is deemed necessary to protect the public health, or may temporarily exempt such pesticide chemical from a tolerance. In establishing such a tolerance, the Secretary shall give due regard to the necessity for experimental work in developing an adequate, wholesome, and economical food supply and to the limited hazard to the public health involved in such work when conducted in accordance with applicable regulations under the Federal Insecticide, Fungicide, and Rodenticide Act.

(k) Regulations affecting pesticide chemicals in or on raw agricultural commodities which are promulgated under the authority of section 406 (a) upon the basis of public hearings instituted before January 1, 1953, in accordance with section 701 (e), shall be deemed to be regulations under this section and shall be subject to amendment or repeal as provided in subsection (m).

(l) The Secretary of Agriculture, upon request of any person who has registered, or who has submitted an application for the registration of, an economic poison under the Federal Insecticide, Fungicide, and Rodenticide Act, and whose request is accompanied by a copy of a petition filed by such person under subsection (d) (1) with respect to a pesticide chemical which constitutes, or is an ingredient of, such economic poison, shall, within thirty days or within sixty days if upon notice prior to the termination of such thirty days the Secretary deems it necessary to postpone action for such period, on the basis of data before him, either—

(1) certify to the Secretary of Health, Education, and Welfare that such pesticide chemical is useful for the purpose for which a tolerance or exemption is sought; or

(2) notify the person requesting the certification of his proposal to certify that the pesticide chemical does not appear to be useful for the pur-

pose for which a tolerance or exemption is sought, or appears to be useful for only some of the purposes for which a tolerance or exemption is sought. In the event that the Secretary of Agriculture takes the action described in clause (2) of the preceding sentence, the person requesting the certification, within one week after receiving the proposed certification, may either (A) request the Secretary of Agriculture to certify to the Secretary of Health, Education, and Welfare on the basis of the proposed certification; (B) request a hearing on the proposed certification or the parts thereof objected to; or (C) request both such certification and such hearing. If no such action is taken, the Secretary may by order make the certification as proposed. In the event that the action described in clause (A) or (C) is taken, the Secretary shall by order make the certification as proposed with respect to such parts thereof as are requested. In the event a hearing is requested, the Secretary of Agriculture shall provide opportunity for a prompt hearing. The certification of the Secretary of Agriculture as the result of such hearing shall be made by order and shall be based only on substantial evidence of record at the hearing and shall set forth detailed findings of fact. In no event shall the time elapsing between the making of a request for a certification under this subsection and final certification by the Secretary of Agriculture exceed one hundred and sixty days. The Secretary shall submit to the Secretary of Health, Education, and Welfare with any certification of usefulness under this subsection an opinion, based on the data before him, whether the tolerance or exemption proposed by the petitioner reasonably reflects the amount of residue likely to result when the pesticide chemical is used in the manner proposed for the purpose for which the certification is made. The Secretary of Agriculture, after due notice and opportunity for public hearing, is authorized to promulgate rules and regulations for carrying out the provisions of this subsection.

(m) The Secretary of Health, Education, and Welfare shall prescribe by regulations the procedure by which regulations under this section may be amended or repealed, and such procedure shall conform to the procedure provided in this section for the promulgation of regulations establishing tolerances, including the appointment of advisory committees and the procedure for referring petitions to such committees.

(n) The provisions of section 303 (c) of the Federal Food, Drug, and Cosmetic Act with respect to the furnishing of guaranties shall be applicable to raw agricultural commodities covered by this section.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
Washington, D. C., June 23, 1954.

HON. H. ALEXANDER SMITH,
Chairman, Committee on Labor and Public Welfare,
United States Senate, Washington, D. C.

DEAR MR. CHAIRMAN: This is in response to your requests for reports on S. 2868 and H. R. 7125, bills to amend the Federal Food, Drug, and Cosmetic Act with respect to residues of pesticide chemicals in or on raw agricultural commodities.

These bills are substantially identical. (The only difference between the bills is that in the House version certain typographical and other minor clarifications have been made. See H. Rept. No. 1385, p. 1.) As used hereafter in this report, therefore, the term "bill" is used to refer to both bills interchangeably.

This bill is a revision of an earlier version (see S. 1542; H. R. 4277), in which we reported on July 14, 1953, and is the outgrowth of several conferences between representatives of the National Agricultural Chemicals Association, representatives of farm organizations, representatives of this Department and the Department of Agriculture, and others concerned, following hearings held before the House Committee on Interstate and Foreign Commerce. Most of the differences of opinion over the earlier version of the bill were resolved through these conferences, and the present version is, in our opinion, a great improvement over the earlier one.

The revised bill has as its basic purposes better protection of the public health and simplification and speeding up the administrative process in establishing tolerances for pesticide chemical residues on raw agricultural commodities. We heartily endorse these objectives.

Under existing law added poisonous and deleterious substances—and most pesticide chemicals fall in this class—must be kept out of foods unless they are required in production or cannot be avoided in good manufacturing practice. When the poison is required in production—as many pesticide chemicals are required in growing agricultural crops—a tolerance may be established after a formal public hearing. Detailed findings of fact and conclusions must be made by the Secretary of Health, Education, and Welfare, as to the required use of pesticide and the residue levels that may safety be tolerated.

Insofar as raw agricultural commodities are concerned, the present bill would relieve us from the difficult task of having to determine, or prove to a jury, whether a given pesticide chemical is "required in production or cannot be avoided by good manufacturing practice," and would substitute for that test the test of agricultural usefulness, the determination of which would be left to the Secretary of Agriculture. He would evaluate the agricultural needs and certify whether the pesticide chemical is useful for the purpose proposed, together with an opinion as to the amount of residue likely to remain on the raw agricultural commodity.

This Department would then be responsible for establishing tolerances, or exemptions from tolerances, for useful pesticide chemicals. Any food which is a raw agricultural commodity and which has been treated with a pesticide chemical that is poisonous or deleterious or that is not generally recognized among experts as safe for use, would be deemed unsafe and hence adulterated unless a tolerance or exemption has first been prescribed. Any tolerance prescribed must limit the pesticide chemical residue to the extent necessary to protect the public health. The bill contemplates that the tolerance shall be fixed at zero—and use of the chemical thus prohibited—where the scientific data submitted to establish its safety justifies no greater tolerance.

The bill would provide both informal and formal procedure for establishing tolerances. But the formal procedure, which includes a full public hearing, decision on the record, detailed findings, etc., would not come into play until after the informal procedure has been exhausted and has failed to bring about a tolerance satisfactory to all interested parties.

The informal procedure would be started by a petition for a tolerance or for an exemption, filed by any person who is also an applicant for registration of the economic poison under the Federal Insecticide, Fungicide, and Rodenticide Act. This petition would have to include scientific data to show whether the chemical may be safely used in the manner proposed. If satisfied with these data, we would issue a regulation establishing a tolerance or granting an exemption. This action is to be taken within 90 days after certification of usefulness by the Secretary of Agriculture.

But within the 90-day period either the petitioner or this Department could have the petition, with all its scientific data, referred to an ad hoc advisory committee of experts for study and recommendation. The committee is to be appointed by the Secretary from scientists selected by the National Academy of Sciences, including in each case one or more representatives from land-grant colleges. The full report of the committee, which would include all underlying data and other information before the group as well as its reasons and recommendation, would have to be certified to us within 60 days, or within 120 days if the committee deems additional time necessary. We would then have 30 days, after considering the committee's report, to act on the petition and by order announce a regulation establishing a tolerance (which could be zero) or an exemption. This order would take effect on publication and would end the informal procedure.

The formal procedure would start with an objection filed within 30 days to this published order. Any person, including the original petitioner for a tolerance or exemption, would be entitled to file such objection, if adversely affected by the order. The original petitioner, assuming that the objection is filed by some other person, would be given a chance to reply. A notice of hearing would be published and a formal hearing on the issues held. At such hearing, in addition to any evidence adduced at the hearing, the report of the advisory committee, if the matter had previously been referred to such a committee, would, together with all underlying data, be put into the record, subject, of course, to the right of all interested parties to cross-examine witnesses and to offer evidence in rebuttal, as authorized by the Administrative Procedure Act.

Judicial review of the final administrative regulations promulgated after formal proceedings would be available to the same extent that existing law authorizes review of regulations emerging from other formal rulemaking proceedings.

The bill would authorize the Secretary to initiate action leading to tolerance regulations; it would provide for the issuance of experimental permits; it would authorize the establishment of regulations for the amendment and repeal of tolerances; it would continue existing provisions relating to false guaranties applicable to raw agricultural commodities; and it would provide for the transition from existing law to the new procedures.

The explanation of the bill in the House report on H. R. 7125 is in accordance with our understanding of the probable interpretation and effect of the bill insofar as the functions of this Department under this bill are concerned, and we, therefore, have no additional suggestions for amendment (beyond the clarifying amendments already made in the House bill) except with respect to the question of fees for the services to be performed under the bill.

The bill fails to authorize the collection of fees to cover the cost of this service. In the absence of additional funds for this purpose, we could not, without seriously neglecting other essential functions under the Federal Food, Drug, and Cosmetic Act, discharge this responsibility. Not only does the present budgetary stringency make it high desirable that this service be placed on a self-sustaining basis, but as a matter of general principle, where a product cannot be safely marketed without a governmental determination and clearance as to safety, it seems justifiable to charge the cost of making such determination and giving such clearance to the industry as a part of the cost of doing business, at least insofar as the public interest does not manifestly require the recovery of something less than cost. Suggested language to permit this is enclosed.

As stated at the outset, we fully endorse the objectives of this bill. We, therefore, recommend that the bill, modified by insertion of fee-charging authority (plus the amendments already contained in the House version), be enacted by the Congress.

The Bureau of the Budget advises that it perceives no objection to the submission of this report to your committee.

Sincerely yours,

NELSON A. ROCKEFELLER,
Acting Secretary.

DRAFT OF FEE-CHARGING AUTHORITY FOR INSERTION IN H. R. 7124 OR S. 2868

"(o) The Secretary of Health, Education, and Welfare shall by regulation require the payment of such fees as will in the aggregate, in the judgment of the Secretary, be sufficient over a reasonable term to provide, equip, and maintain an adequate service for the performance of the Secretary's functions under this section. Under such regulations, the performance of the Secretary's services or other functions pursuant to this section, including any one or more of the following, may be conditioned upon the payment of such fees: (1) The acceptance of filing of a petition submitted under subsection (d); (2) the promulgation of a regulation establishing a tolerance, or an exemption from the necessity of a tolerance, under this section, or the amendment or repeal of such a regulation; (3) the referral of a petition or proposal under this section to an advisory committee; (4) the acceptance for filing of objections under subsection (d) (5); or (5) the certification and filing in court of a transcript of the proceedings and the record under subsection (i) (2). Such regulations may further provide for waiver or refund of fees in whole or in part when in the judgment of the Secretary such waiver or refund is equitable and not contrary to the purposes of this subsection."

In H. R. 7125 as passed by the House, the above-quoted amendment would be inserted on page 18 between lines 19 and 20, after striking out the quotation marks on line 19. In the Senate bill, the above-quoted amendment would be inserted on page 18 between lines 13 and 14, after striking out the quotation marks in line 13.

DEPARTMENT OF AGRICULTURE,
Washington 25, D. C., March 10, 1954.

Hon. H. ALEXANDER SMITH,
Chairman, Committee on Labor and Public Welfare,
United States Senate, Washington, D. C.

DEAR SENATOR SMITH: This is in reply to your request of February 3, 1954, for a report on S. 2868, a bill to amend the Federal Food, Drug, and Cosmetic

Act with respect to residues of pesticide chemicals in or on raw agricultural commodities."

This Department favors the bill insofar as it directly affects our programs and activities. We have the following comments to make concerning certain provisions of the bill:

1. We interpret section 408 (d) (1) to mean that registration operations under the Federal Insecticide, Fungicide, and Rodenticide Act shall be coordinated with the provisions of this bill relating to the setting of tolerances to protect the public. It is understood that for this purpose the time required for registration of those products for which a petition for a tolerance or exemption has been filed may be greater than the time presently required for registration of economic poisons.

2. An interpretive question arises concerning the meaning of the term "useful" as it is used in section 408 (1), inasmuch as tolerances are set and exemptions are made only on those pesticide chemicals which the Secretary of Agriculture certifies as "useful" for the purpose for which a tolerance or exemption is sought. A related question concerns the matter of the effect, if any, of the certification of usefulness on registration of pesticide chemicals under the Federal Insecticide, Fungicide, and Rodenticide Act. An interpretive statement relating to these matters has been agreed upon by representatives of the industry and this Department. A copy of this statement is attached.

3. Section 408 (1) makes provision for a hearing in the event the Secretary of Agriculture proposes to certify that on the basis of the data before him the pesticide chemical does not appear to be useful for the purpose for which a tolerance or exemption is sought or appears to be useful for only some of the purposes for which a tolerance or exemption is sought. This Department does not object to the hearing provision of the bill. It should be noted, however, that the holding of hearings might result in additional expense to this Department, the amount of such additional expense being contingent upon the number of hearings held. An estimate of this additional expense is not currently determinable since this Department has not had previous experience with hearing requirements of this nature and since hearings will be held solely upon the request of members of the industry.

4. Section 408 (1) also requires the Secretary of Agriculture to submit to the Secretary of Health, Education, and Welfare with any certification of usefulness an opinion, based on the data before him, whether the tolerance or exemption proposed by the petitioner reasonably reflects the amount of residue likely to result when the pesticide chemical is used in the manner proposed for the purpose for which certification is made. This Department interprets this to mean that any review basic to such an expression of opinion will include consideration of the data submitted by the applicant or otherwise before the Secretary of Agriculture, and recognition of natural factors inherent in agriculture, such as soil and climatic conditions. However, we do not interpret this provision to place responsibility on this Department for a final evaluation of the analytical methods used by the applicant in arriving at the data which are submitted. We also interpret this section to mean that if the data before the Secretary does not reasonably support the tolerance or exemption proposed by the petitioner the opinion shall so state.

The Bureau of the Budget advises that there is no objection to the submission of this report.

Sincerely yours,

TRUE D. MORSE, *Under Secretary.*

INTERPRETIVE STATEMENT RE MEANING OF THE TERM "USEFUL"

Another important interpretive question which is presented is the legislative meaning of the term "useful" as it is employed in the bill. This term is an important one since tolerances are set and exemptions are made only on those pesticides which the Secretary of Agriculture certifies to be "useful for the purpose for which a tolerance or exemption is sought."

Usefulness of a pesticide chemical for the purpose of certification under S. 2868 should be determined upon the basis of its practical biological or pesticidal effectiveness. Pesticidal effectiveness may be established in terms of percentage reduction or control of pests or, when appropriate, increase in yield or quality of crop or other economic gain or practical benefit following application of the specified pesticide under the conditions prescribed, compared with results from

adequate controls. In determining practical effectiveness, consideration may be given to other economic gain or practical benefit including: economy or ease of production, harvest, or storage of the crop; flexibility as regards time of planting or harvest, even at the possible sacrifice of yield; and general benefit to livestock, plants, or human welfare not necessarily related to yield.

One of the purposes of this bill is to expedite the setting of tolerances with a minimum of delay and without undue burden upon the administrative agencies involved. To minimize the need for repeated certifications and setting of tolerances for specific uses of a pesticide chemical as they are established, certification should be on as broad a basis as the data submitted to the Secretary of Agriculture warrant. Thus, when the petitioner submits data showing that a pesticide chemical is effective against one or more pests common to fresh fruits, if the petitioner so requests, the chemical should be certified as useful on fresh fruits for the purpose of establishing a tolerance thereon even though it has not been tested on all fresh fruits, providing the data reasonably indicate that it will be effective on a wide variety of fresh fruits.

Factors other than pesticidal effectiveness are considered in the granting of registration under the Federal Insecticide, Fungicide, and Rodenticide Act of 1947. Many of these factors have no relation to the subject matter of this bill which is concerned with the protection of the public health and the setting of tolerances. It is not intended that the criteria for registration be applied to the certification of usefulness. Such certification should be made by the Secretary of Agriculture upon the establishment of pesticidal effectiveness unless available information indicates that the pesticidal chemical is unacceptable for registration as regards the proposed food use.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D. C., June 23, 1954.

Hon. H. ALEXANDER SMITH
Chairman, Committee on Labor and Public Welfare,
United States Senate, Washington, D. C.

MY DEAR MR. CHAIRMAN: This is in reply to your letter of April 8, 1954, requesting the views of the Bureau of the Budget on H. R. 7125, a bill which passed the House on April 5, 1954, to amend the Federal Food, Drug, and Cosmetic Act with respect to residues of pesticide chemicals in or on raw agricultural commodities. We understand that this bill supersedes S. 1542 and S. 2868 with respect to which your committee has also requested our views.

The Department of Health, Education, and Welfare is submitting a report to your committee on H. R. 7125. The Bureau of the Budget concurs in the views of this Department on the desirability of the proposed legislation. We wish, however, to point out that the administrative arrangements for scientific reviews of tolerances are less flexible than would ordinarily be desirable. In the special circumstances of this case, where a major end sought is assurance to the public of a wholesome safe food supply, such arrangements, we believe, are warranted.

The Department of Health, Education, and Welfare recommends the inclusion of a fee to cover the cost of services to be performed under the bill. The Bureau of the Budget believes that this proposal should receive favorable consideration by the committee.

Sincerely yours,

DONALD R. BELCHER, *Assistant Director.*

Senator PURTELL. We are happy this morning to have as our first witness my colleague from that fine old State of Vermont, Senator George D. Aiken.

STATEMENT OF HON. GEORGE D. AIKEN, UNITED STATES SENATOR FROM THE STATE OF VERMONT

Senator AIKEN. Mr. Chairman, I sponsored this bill in the Senate, not because I am an expert chemist, but because there was so much demand for a bill of this kind from our horticulturists, from State experiment stations, State agricultural colleges, and from the departments of Government directly concerned that I felt that there must be a real need of the bill. Therefore, I introduced it in the Senate.

Another reason that I offered this bill was because of my confidence in the sponsor in the House, Dr. A. L. Miller, Congressman from Nebraska. I know that "Doc" Miller, as we call him, has always been very solicitous in matters relating to public health, and my confidence in him is such that I would not hesitate to sponsor this bill in the Senate. I don't know that there is much opposition to it. It would be unusual to have a bill without any opposition whatsoever, but I do know that the agricultural interests, their allied interest and the departments of Government are in favor of this bill, and therefore I hope that it will secure the approval of this committee and of the Senate.

That is all I have to say.

Senator PURTELL. Thank you very much, Senator, and thank you for coming here today.

I know that Representative A. L. Miller had intended to be here, but he is unable to be present. However, he has asked his assistant, Mr. Karabatsos to present his statement, I believe. Is that correct, sir?

Mr. KARABATSOS. Yes, sir.

Senator PURTELL. I am very happy to have you do so.

Mr. KARABATSOS. Dr. Miller sends his regrets, but he was called to the funeral of one of his colleagues.

STATEMENT OF HON. A. L. MILLER, UNITED STATES REPRESENTATIVE FROM THE STATE OF NEBRASKA

Mr. MILLER (presented by Mr. Kimon Karabatsos). Mr. Chairman, members of the committee, as you know, I am Dr. A. L. Miller, Member of Congress from the Fourth Congressional District of Nebraska. I appear before you today in support of S. 2868 and H. R. 7125, introduced by Senator Aiken and myself, respectively. I sincerely feel these identical bills merit your approval and support since they are definitely a public health measure, and will greatly facilitate the procedures to be used in establishing a tolerance for a new chemical additive in pesticides.

The pesticide industry is a relatively new industry, having made its greatest advances since the end of World War II. It has done, and is doing, a great service to our agricultural industry. The industry has been quite anxious to maintain its good name and has supported every piece of constructive legislation before Congress. The people of the industry realize they have a duty to their customers and the American public to insure that their product will not endanger the public health.

As a member of the select committee of the House which investigated the use of chemical additives in foods, drugs, cosmetics, and pesticides during the 81st and 82d Congress, I sat in on many hours of

hearings conducted throughout the United States. During those hearings, it was determined that legislation would be needed which would amend the pure food and drug laws of our Nation in regard to pesticides. Testimony given then pointed out that of the 40,000 different pesticides on the market, only one tolerance had been established. I want to point out at this time, however, that this was not the fault of the Food and Drug Administration—it was being unduly handicapped by bulky and time-consuming procedures required under existing legislation.

I have worked for a number of years with all interested parties to come up with this amendment to the food and drug law. At first, the difference between the groups seemed unreconcilable. But, patience has reaped its dividend. All those with whom I have worked are to be congratulated. They have done an excellent job.

My special congratulations go out to Mr. Lea Hitchner and J. A. Noone of the National Agricultural Chemicals Association, who have worked so diligently getting all interested parties together in order that we might have complete unanimity of approval on a bill so important to our Nation's health and agriculture economy.

I see by the roster of witnesses to be heard that all affected by this legislation will be heard—the Department of Health, Education, and Welfare, the chemical industry, the land grant colleges, and the various farm organizations. Since each will tell their interests and how the bill will affect them, I do not feel it is necessary for me to delve into the operations of the bill.

It is my sincere hope that you will act favorably upon this legislation which has been passed by the House. In so doing, I am convinced that you will be doing much to protect the public health of our Nation.

Senator PURTELL. Thank you very much, sir. You can assure the Congressman that we realize how interested he is in this, obviously, and we know that he wished to appear here. I shall inform my colleagues that he is not here through lack of interest, but because of other official duties which did not permit his presence.

Our next witness is Dr. Charles Crawford, Commissioner, Food and Drug Administration.

STATEMENT OF DR. CHARLES CRAWFORD, COMMISSIONER, FOOD AND DRUG ADMINISTRATION

Dr. CRAWFORD. Mr. Chairman, I have no prepared statement to present to you this morning. The department rests upon its support which has been submitted to the committee.

I would like to emphasize, however, the only suggestion that the department makes for a change in the pending bill, and that is a change which would authorize the collection of fees for the maintenance of the service. The need for that is particularly acute at this time.

Last year our appropriation was reduced by about 8 percent—a little over. The bill passed by the House a few days ago and as reported by the Senate committee yesterday carried a 2 percent cut. We are in desperate need for funds to take care of the many serious problems continually arising under this law, and to impose this additional law upon our operations now would be devastating to the overall protection of the public.

If I may, for the sake of emphasis, I would like to read the paragraph in the Secretary's letter relating to this problem.

> The bill fails to authorize the collection of fees to cover the cost of this service. In the absence of additional funds for this purpose, we could not, without seriously neglecting other essential functions under the Federal Food, Drug, and Cosmetic Act, discharge this responsibility. Not only does the present budgetary stringency make it highly desirable that this service be placed on a self-sustaining basis, but as a matter of general principle, where a product cannot be safely marketed without a governmental determination and clearance as to safety, it seems justifiable to charge the cost of making such determination and giving such clearance to the industry as a part of the cost of doing business, at least insofar as the public interest does not manifestly require the recovery of something less than cost. Suggested language to permit this is enclosed.

That is filed with the committee now, the proposed amendment.

Senator PURTELL. Doctor, do you presently have fees charged for Government services rendered by your department such as, for instance, in the antibiotic drugs and so forth?

Dr. CRAWFORD. In antibiotic drugs?

Senator PURTELL. Well I mention that, but in any.

Dr. CRAWFORD. Yes—well authorization for the collection of fees to provide equipment to maintain the service in the case of five important antibiotic drugs, in the case of all charcoal colors intended for use in food, drugs, and cosmetics, in the case of all preparations of insulin, and in the case of seafood service, which is a voluntary service which may be requested by the packer.

Senator PURTELL. How are these fees levied and how are they collected, sir?

Dr. CRAWFORD. They are levied upon the basis of an estimate of what is regarded as a probable expenditure for the year, and the interested person pays those fees in advance of the rendering of the service. At the end of the year if we have charged more than what is required, as we usually do to be safe, then the excess is refunded back to those who paid it on a pro rata basis.

Those fees go into the Treasury of the United States and are subject to use in the support and maintenance of the service.

Senator PURTELL. You are doing that on the basis that it is a service to these individuals to do it; is that right?

Dr. CRAWFORD. That is right.

Senator PURTELL. Not only a service, but is in the way of a protection, too?

Dr. CRAWFORD. It is a protection.

Senator PURTELL. Do you have further information?

Dr. CRAWFORD. That is all I care to present, Mr. Chairman.

Senator PURTELL. Thank you very much. That is a very interesting observation, and I can assure you we are going to give it consideration.

Our next witness is Mr. L. S. Hitchner, secretary, National Agricultural Chemicals Association.

Just a minute. May I ask the doctor to come back again.

Have you any idea as to what the financial requirement would be in the event this becomes law? In other words, what the total cost of seeing it effectuated will be.

Dr. CRAWFORD. I would like to give you figures subject to correction, Senator. My recollection is that the estimated cost of rendering the

service for the first year is something in the neighborhood of one hundred and twenty to one hundred and twenty-five thousand dollars.

Senator PURTELL. Do you know, Doctor, whether or not, or have you discussed it or explored it with industry, or do you have any indication from industry as to whether they would go along in your thinking that a fee should be levied?

Dr. CRAWFORD. Yes; we have discussed it with industry and they are prepared to give you some observations on that point, I am sure.

Senator PURTELL. Now since you are here to tell us your thinking, knowing their conclusions, or I assume you know their conclusions, are they conclusions that you are in complete accord with, or is there still a difference of opinion?

Dr. CRAWFORD. I don't believe there is any significant difference of opinion, and I would like to say what I am going to say subject to correction by Mr. Hitchner and his people, who are immediately concerned here with this bill. I understand that they are willing to go along with this fee idea provided that industry is not singled out for this sort of thing, but that this principle is adopted generally in legislation of this kind.

Senator PURTELL. Do you go along with that?

Dr. CRAWFORD. I do.

Senator PURTELL. And your department, of course, does?

Dr. CRAWFORD. That is right.

Senator PURTELL. Since we are exploring this rather new area here, have you any questions you wish to ask?

Mr. SNEED. No.

Senator PURTELL. Mr. Reidy, have you any information you wish to get to help us in our deliberations?

Mr. REIDY. You have asked the basic questions, Senator.

I would like to ask what effect this would have retroactively on the activities in which the Department are now engaged if you adopt this principle of receiving this fee.

Dr. CRAWFORD. I don't consider it would be retroactive at all.

Mr. REIDY. There are no activities going on in the Department now to which it would be applied?

Dr. CRAWFORD. It would become operative when the law becomes effective authorizing this sort of collection.

Mr. REIDY. Would it affect only new undertakings of the Department, or would it affect undertakings you have been carrying on for some time?

Dr. CRAWFORD. There is a possibility that the Department may recommend to the Congress a bill to amend the law to collect fees in some other way with respect to other activities, but that is something that will be deliberated.

Mr. REIDY. You are not suggesting that we tie that in with this?

Dr. CRAWFORD. Not at all.

Senator PURTELL. I was going to say, Doctor, certainly I don't believe anyway that the industry would say that the fees only be charged in the event that other things were done. We are dealing with this particular piece of legislation. Now I would think what they want from you is an expression from you as to your attitude toward this whole thing, but obviously we couldn't have this contingent upon something else—at least I don't think we should—but it would set a precedent in this particular field, I gather, although it isn't a precedent

as far as the Department goes, but it would establish; that is, your thinking and the Department's thinking, that it would probably make it easier in other fields to apply this same thinking and the same application to seeing that the costs are recovered from the industries that are served. I don't think you can tie them up and say that we will go along with you on the basis of charging a fee of you do it in every other case or in any X number of cases.

Dr. CRAWFORD. No; but what we are recommending here, Mr. Chairman, is an extension of a precedent which has already been established, and we think that is a sound way of carrying out the work.

Senator PURTELL. And you are applying it here or you would like to see it applied?

Dr. CRAWFORD. We are applying it here and wherever we have the specific authority of Congress to do so.

Senator PURTELL. You would like to see Congress give you that authority?

Dr. CRAWFORD. That is right.

Senator PURTELL. I think that covers the questions I have. Thank you very much. You have helped us a great deal, and I know you will be available for other questions if they should arise because we would like to clear this up, if we can, this morning.

Now Mr. Hitchner, we will be glad to hear from you.

STATEMENT OF L. S. HITCHNER, SECRETARY, NATIONAL AGRICULTURAL CHEMICALS ASSOCIATION

Mr. HITCHNER. Thank you, Senator.

I have here a short statement that I am going to read, and attached to it are some supplementary comments which I would appreciate having made a part of the record.

Senator PURTELL. The supplementary comments will become part of the record, and such other extemporaneous remarks you wish to make.

Mr. HITCHNER. My name is Lea S. Hitchner. I am executive secretary of the National Agricultural Chemicals Association, located at 910 17th Street NW., Washington, D. C. The members of NAC are producers and formulators of insecticides, fungicides, herbicides, defoilants, and related products hereafter referred to as pesticides. The members of NAC produce more than 85 percent of the basic pesticidal chemicals and produce more than 60 percent of the formulated pesticides. All members of the association and other leaders in the industry have been informed by us of the pending legislation, and it has been widely publicized in the NAC News. This publication has a circulation of 13,000 going to land-grant colleges, farm organizations, farm and radio press, and such groups that keep the farmer informed.

We have received a great amount of mail from our members endorsing the legislation. We have received no objections. We have been authorized by the board of directors on behalf of the association and its members, to present this statement.

We wish to unqualifiedly endorse, and respectfully request the passage of, this legislation. The primary purpose of this proposed legislation is to provide increased protection to the public health by establishing effective methods of controlling the amount of pesticide

residue which may be left on raw agricultural commodities. The farmer cannot function without the use of these commodities. The farmer cannot function without the use of these materials. Accordingly, provision is made to establish the limit of residues, if any, which can remain on certain food products.

This problem is not a new one. It was recognized by Congress when they passed the Federal Food, Drug, and Cosmetic Act in 1938 that an adequate supply of food cannot be produced without the use of pesticides. However, recent experience has shown that the procedure specified in that legislation is impracticable. Up to the present time, only one tolerance has been established.

This legislation will create a separate section relating to pesticides under the Federal Food, Drug, and Cosmetic Act and thereby separate agricultural pesticides from chemicals used in processing of foods or for other uses.

It would establish a simple procedure for setting tolerances. The procedures would be initiated by filing a petition for establishing a tolerance, accompanied by supporting data.

The procedure would be initiated by the Secretary of Health, Education, and Welfare or by other interested parties who file a request for the establishment of a tolerance, together with adequate supporting scientific data.

In the majority of cases, tolerances would be established by regulation following discussion and review of the data submitted.

Provision is made for the use of an impartial advisory panel nominated by the National Academy of Sciences. In the event of differences of opinion, provision is made for hearings under the Administrative Procedure Act and finally for judicial review.

The question of determining agricultural usefulness of pesticides is delegated to the Secretary of Agriculture.

The final action on setting a tolerance reflects the decision of the Secretary of Agriculture and the Secretary of Health, Education, and Welfare.

This legislation is necessary and advantageous to all concerned with the use of pesticide chemicals.

The food consumer would be protected against any harmful residues of pesticide chemicals in the food supply, and the fears of some consumers in this regard would be allayed.

The grower would be assured that he would be in compliance with the law if he follows the recommendations of the agencies giving directions for use or on the manufacturer's label.

Federal and State agencies, such as the land-grant colleges and the United States Department of Agriculture, which advise the grower on the use of pesticide chemicals, would have standards upon which to base their recommendations on the use of these chemicals.

Chemical manufacturers would also have standards upon which to base recommendations.

The Department of Health, Education, and Welfare would have definite standards in carrying out their enforcement responsibilities as regards a safe food supply under the Food, Drug, and Cosmetic Act. The bill, therefore, is of interest to all this tremendous group of consumers, producers, as well as the chemical industry.

This legislation is the result of study over a period of the last 2 years on the part of the Government agencies interested, namely, the

Department of Health, Education, and Welfare, the United States Department of Agriculture, and also the land-grant colleges, the farm organizations, the food processors, the chemical industry, members of congressional committees and staffs, and others.

In the light of the unanimous support for H. R. 7125, the House Committee on Interstate and Foreign Commerce reported it promptly after hearing and without amendment, except for some minor changes intended to correct typographical errors, and it was passed by the House on the Unanimous Consent Calendar. This bill has the unanimous support of all the leading groups interested, and we know of no opposition.

As part of this statement, I am attaching a more detailed explanation of the procedure for complying with the legislation. I would like, also, to call attention to the report of the House Committee, which contains a studied and comprehensive analysis of all details of the legislation.

(The supplementary statement of Mr. Hitchner is as follows:)

SUPPLEMENTAL STATEMENT OF L. S. HITCHNER, SECRETARY, NATIONAL AGRICULTURAL CHEMICALS ASSOCIATION

These bills provide for amending certain provisions of the Federal Food, Drug, and Cosmetic Act of 1938 and adding thereto a new section dealing exclusively with pesticides in or on raw agricultural commodities. The objective of these amendments is to assure greater protection of the public health by improving the procedures specified in that act for regulating and limiting the amount of pesticide residues which may remain in or on those commodities following the use of pesticides in the production, transportation, and storage of such food.

The necessity for the use of pesticides such as insecticides, weedkillers, and fungicides in the production of an adequate, wholesome, and economical food supply is well established. Dr. H. L. Haller, Assistant Director, Crops Research Divisions, Agricultural Research Service, United States Department of Agriculture, has stated: "Over one-half the commonly used foods grown in the United States require the use of pesticides." Dr. Fred C. Bishopp, who recently retired as Assistant Chief of the Bureau of Entomology and Plant Quarantine, United States Department of Agriculture, emphasized this fact in these words: "An abundance of high quality food and fiber crops is absolutely dependent upon the use of a diversified group of insecticides * * * Without insecticides, vegetables, fruits, and cereals would be unmarketable even by low standards. Wormy apples, corn, and cabbage, weevily cereals, and other infested foodstuffs, with the accompanying wastes of insects, would reach the market in condition unfit for human consumption. * * *

When Congress was considering what was to become the Federal Food, Drug, and Cosmetic Act of 1938, it recognized that an adequate and wholesome supply of food could not be produced without the use of pesticides. The Congress incorporated into that act provisions for controlling the amount of pesticide residue which might remain on food. Its objective was to permit the continued use of pesticides in the production of food while at the same time safeguarding the public against any harmful effects of such use. However, the procedure specified for accomplishing this objective has proven impracticable under present-day conditions of wide usage of a large number of pesticides and the constant introduction of newer, more complicated, and more effective products.

PRESENT LAW

The Food, Drug, and Cosmetic Act prohibits the presence in food of any poisonous or deleterious substances, unless they are required in the production of the food or cannot be avoided by good manufacturing practices. When such substances are required in the production of food, as pesticide chemicals are required in the growing of agricultural crops, the Secretary of Health, Education, and Welfare is authorized to limit by regulation the amount of such substances

which may remain in or on the food. The maximum amount of such a substance which may remain under the terms of a regulation is commonly referred to as a tolerance. Most pesticides fall legally within the definition of poisonous and deleterious substances. As such, they are subject to this tolerance setting provision.

PRESENT PROCEDURE FOR ESTABLISHING TOLERANCES

The present procedure for establishing tolerances for pesticide chemicals involves the holding of formal public hearings. Since detailed findings of fact and conclusions must be made by the Secretary of Health, Education, and Welfare on the basis of the record made at such hearings, comprehensive evidence must be presented on all phases of the use of each pesticide, even on those points on which there is full agreement by all interested parties. This necessitates the calling of a large number of witnesses from all parts of the country at great expense to Federal and State agencies, grower groups, research institutions, and pesticide manufacturers. Considerable time must then elapse while the record developed at the hearings is carefully reviewed and the detailed findings of fact and conclusions drawn, as required by law, before a proposed tolerance can be announced. Additional time must then be allowed for study of the proposed tolerance by interested groups and the submission of comments before the tolerance can be made effective. By the time the tolerance is made effective, the accumulation of additional scientific data may have already outdated in part the findings and rulings based upon the hearings.

This procedure has been in effect for over 15 years. During this period, a tolerance has been established for only one pesticide. Meanwhile, control over the residues of other chemicals has been achieved through unofficial and informal tolerances and the cooperative action on the part of the Food and Drug Administration, the United States Department of Agriculture, and the manufacturers of pesticide chemicals. While this may have been satisfactory for the protection of the public health, it has been unsatisfactory from a legal viewpoint to all concerned, the enforcement agencies, the growers, the Federal and State agencies which advise the growers on pest-control problems, and the pesticide manufacturer. The lack of tolerances has created an atmosphere of uncertainty as to the legal status under the Food, Drug, and Comestic Act of food bearing traces of pesticide residues.

In 1950, lengthy hearings were held for the purpose of establishing tolerances for those pesticide chemicals then in use in the production of fresh fruits and vegetables. The cost to the Federal Government, to the various land-grant colleges, to the agricultural organizations, to the industry and to others participating in these hearings amounted to more than half a million dollars. However, no tolerances have yet been established or announced as a result of those hearings.

It is generally recognized that a primary reason why tolerances have not been established to control the agricultural usage of pesticides as intended by Congress has been the cumbersome and impracticable procedure provided for in the existing law. H. R. 7125 and S. 2868 are designed to remedy this situation by providing for a simpler, improved and more appropriate procedure for establishing tolerances for pesticide chemicals used in or on raw agricultural commodities.

PROPOSED PROCEDURE IN BILLS

The substance of these bills lies in the procedure provided for the establishment of tolerances for pesticide chemicals used in or on raw agricultural commodities.

Under the bills, the procedure for establishing a tolerance for a pesticide chemical to be used on raw agricultural commodities would be initiated by a person, usually the manufacturer, who had applied for registration of a product containing that pesticide chemical under the provisions of the Federal Insecticide, Fungicide, and Rodenticide Act of 1947, or by the Secretary of Health, Education, and Welfare on her own motion. Such person would file a petition with the Secretary of Health, Education, and Welfare, requesting that a tolerance be established, and submit along with the petition scientific data upon which safe residue limits might be established. He would also request the Secretary of Agriculture to certify to the Secretary of Health, Education, and Welfare that the pesticide chemical was useful for its intended purpose and that the requested tolerance was in line with the amount of residue likely to result when the pesticide chemical was used as proposed. Within 90 days after this was done, the Secretary of Health, Education, and Welfare would make public a regulation establishing a tolerance for that pesticide chemical, unless the petition had been

referred to an advisory committee, in which event the time limit would be extended for an additional period.

If, within that 90-day period, the person petitioning for the tolerance so requested or the Secretary of Health, Education, and Welfare thought it desirable, the petition and all scientific data pertaining to it would be submitted to an advisory committee of scientific experts familiar with the problems involved. The members of these advisory committees would be selected by the National Academy of Sciences. The advisory committee, after studying all the data before it, would make a report and recommendations of an advisory nature to the Secretary of Health, Education, and Welfare who would be expected to give due consideration to it before establishing a tolerance.

These bills also provide that anyone adversely affected by a tolerance issued under the foregoing procedure can request a public hearing on the tolerance or the portions thereof deemed objectionable, upon a showing of reasonable grounds. A public hearing would then be held on the controversial portions of the proposed tolerance, in essentially the same manner as provided for in Public Law 335 of this Congress which amended the Food, Drug, and Cosmetic Act so as to provide a simpler procedure for establishing food standards. Following such a public hearing and on the basis of the evidence developed therein, the Secretary of Health, Education, and Welfare would then publish an order affirming or modifying the original tolerance. This order would be subject to court review in the manner generally prescribed in other regulatory statutes.

The bills also contain provisions for the exemption of certain pesticide chemicals from requirement of a tolerance when one is not necessary for the protection of the public health, and it also provides for the issuance of temporary tolerances for materials under experimental permit in accordance with the provisions of the Federal Insecticide, Fungicide, and Rodenticide Act of 1947. There is also provision for amending or repealing tolerance regulations in accordance with the procedure outlined above.

The procedure specified in H. R. 7125 and S. 2868 would enable the prompt and efficient establishment of appropriate tolerances for pesticide chemicals used in or on raw agricultural commodities. This would be to the advantage of all concerned with the use of pesticides. The food consumer would be protected against the unsafe use of pesticide chemicals in the food supply and the fears of some consumers in this regard would be allayed. Chemical manufacturers and governmental agencies which advise the grower on the use of pesticides, such as the United States Department of Agriculture and the land-grant colleges, would have standards upon which to base recommendations to the grower on the use of these materials. The grower would be assured that he and the crops which he produced would be in compliance with the law, if he followed the recommendations of these agencies and of the manufacturer. The Department of Health, Education, and Welfare would have definite standards to guide them in carrying out their enforcement responsibilities as regards a safe food supply under the Federal Food, Drug, and Cosmetic Act.

This proposed legislation has many other advantages over existing legislation.

It places upon the person proposing the establishment of a tolerance the burden of showing by adequate scientific data that the pesticide performs a useful function, and that it can be used in the manner proposed without presenting a hazard to the public health. This relieves the Federal agencies of the need for conducting expensive research into these matters.

The provision for the establishment of advisory committees of qualified experts makes available to the Government and to the public the knowledge and experience of outstanding scientists for the purpose of reviewing and evaluating lengthy and complex scientific data. It will result in more authoritative and objective evaluation of data and the establishment of sounder regulations than could otherwise be expected on the basis of the limited staffs and experience available in any single governmental agency.

The bills eliminate from the tolerance-setting procedure the need for long public hearings merely for the sake of building a record for later administrative action. Public hearings are omitted when there are no points at issue or in dispute between the interested parties, and provides that public hearings shall be held only on those points to which objection has been made. This Congress has indicated its approval of this approach to rulemaking by its enactment of Public Law 335, the so-called Hale bill, for simplifying the procedure for establishing food standards.

This bill recognizes the existing controls over the marketing of pesticides now provided by the Federal Insecticide, Fungicide, and Rodenticide Act of 1947, and in no way seeks to duplicate that control. Rather, this bill is designed to work in harmony with the Insecticide Act and thereby achieve a maximum protection for the public, a minimum duplication of governmental activity and a minimum of restriction on the manufacturers and users of pesticides beyond that necessary to protect the public health.

These bills recognize the different considerations involved in the use of pesticides as compared to other chemicals which may appear in the food supply. They also recognize the existing regulatory controls over pesticides exerted by the Federal Insecticide, Fungicide, and Rodenticide Act. In recognition of these important considerations they provide a separate and distinct section and procedure in the Food, Drug, and Cosmetic Act for the purpose of regulating pesticides in or on raw agricultural commodities, thereby separating them from other chemicals.

Mr. HITCHNER. Now, Mr. Chairman, I would just like to comment on the question raised by Dr. Crawford with reference to fees, if it is agreeable with you.

Senator PURTELL. We would like to hear it.

Mr. HITCHNER. This subject was also presented to the House committee at the time and they turned down the request for fees. Our position at the time of the House hearing was as follows:

We were under the impression that the administration policy was to charge fees on all Government activities wherever possible. Such being the case, we took the position that if it was a national policy, we would let the committee make the decision on the fee phase, with the qualification, or the suggestion that the burden of this procedure should not be one only on the agricultural-chemical industry, which, in turn, would go to the farmowners of the country, but it should be a regular national policy, and not for one category.

I would like to add another comment. I believe and we have reason to believe that at present Food and Drug can set fees, if they so desire, under their existing legislation. That is one thought I would like to throw out.

Senator PURTELL. Has your opinion changed since the House hearing?

Mr. HITCHNER. It is my impression that the general program is not being adopted as vigorously as it appeared to be at the time of the House hearing.

Senator PURTELL. But you have heard testimony this morning from Dr. Crawford that the Department feels it would like to present this matter for legislative action.

Mr. HITCHNER. If I could add a little background. This is primarily a public health measure. We also have State bills which will no doubt follow the Federal pattern in due course. We would hate to see the fee pattern established unless it is a national policy, which we would not want to impose. This type of work has generally been public charge, and is one which we believe should better be carried by appropriations.

Senator PURTELL. Mr. Hitchner, is there anything, in your opinion, in this particular bill if this procedure is called for in this particular bill which would relieve the pesticide manufacturers from legal liability in the case of, for instance, negligence on their part?

Mr. HITCHNER. No, sir; it does not in any way affect that phase.

Senator PURTELL. Now, of course, in order to get into this fee situation, you have heard testimony this morning from Dr. Crawford

that fees are charged in some instances and not in others, and I would think that the Department's expression this morning was that they would like to see that adopted in every instance they could, if legislation provided for that. Is that correct, Dr. Crawford?

Dr. CRAWFORD. That is correct.

Senator PURTELL. So when you talk about a policy, I would say that is enunciating the policy of the Department; is that correct?

Dr. CRAWFORD. That is the policy of the Department.

Senator PURTELL. So whether or not that is the policy of the department in every instance is another thing, but it is a policy of the Department, and certainly I would take it as a recommendation in such actions as may be taken; is that correct, Doctor?

Dr. CRAWFORD. That is correct.

Senator PURTELL. It might be said it is a policy of the Department.

Mr. HITCHNER. I think we would disagree if it is a Department policy. If it is a legislative policy on the part of the committee, then we would leave it up to the committee, but if it is a question of establishment of fees for these services only on the basis of HEW, then I would have to take the position we would hate to see the fee pattern started.

Senator PURTELL. Do you have any questions?

Mr. SNEED. No.

Senator PURTELL. Counsel for the minority?

Mr. REIDY. If this is departmental policy, can't we assume it would be administrative policy and would be recommended in similar circumstances and similar agencies?

Dr. CRAWFORD. That would be my assumption.

Senator PURTELL. But still, of course, you have the legislative problem which we can't commit any future legislative body to, nor can we attempt to change by legislation what has already become law unless we go through all of these—I mean in general—and I don't think we could adopt any general legislation to cover all of these various applications.

Have you any other questions?

Mr. REIDY. No, sir.

Senator PURTELL. Thank you very much.

Our next witness is Delos James of the National Grange.

STATEMENT OF DELOS L. JAMES, DIRECTOR, AGRICULTURE-INDUSTRY RELATIONS, THE NATIONAL GRANGE

Mr. JAMES. I am Delos James, and I am representing the National Grange, which I think you probably know, as well as the national farm organizations, a family type organization. The family belongs to Grange, and that is composed of the national organizations. We, of course, are very interested in this proposed legislation from the standpoint, first, of producers, and then, secondly, from the standpoint of consumers, because farm people are largely consumers of all types of commodities, and they are just as much concerned about the safety of a food product as a person in the city or town.

It is a little bit difficult, I think, to determine really which group would be the largest benefactors of a protective measure like this, or such as we have, whether it is a farm person or city consumer. But of first concern, of course, is the farmer from the standpoint of a

producer, and he is confronted more and more, as we move into the production process, with things that affect his cost of production, or even insuring his ability to get a crop, especially with the increased difficulties that we are having with the insects and pests and diseases, and weeds, and so forth.

It is becoming a more difficult problem all the time. Of course the people in the cities and towns are as much concerned about that as the farmer. Of course it means his livelihood, too, but to a person in the city or town, it means their existence, you might say. If the food and fiber isn't available, you just can't get along and continue to do anything.

So this consideration by Congress is timely, and I think the Congress is deserving of great credit for giving the matter due consideration in looking at it from new aspects, new principles and so forth to simplify the matter just as much as possible. Costs are going up not only in important respects from the standpoint of producing food, but in other factors, too, that enter into the cost of producing food, and the living costs are going to be awfully important factors as we move along in the years ahead. With the increasing population and the tendency for the fertility of land to wear out, you might say, even though we have large surpluses right now, it is going to be necessary to have some new development to make possible lower costs of production. We aren't facing starvation, but it isn't going to be too long, I am inclined to think, when we won't be too much concerned with what we are going to do with the surpluses, but we are going to be concerned with what we can do to produce enough to supply our people, saying nothing about helping some of the people in other countries.

We look to the Congress now, as we have in the past, for united action, that is, action that will unite the efforts and thinking of the people of the country on a matter that is fundamentally important to the future existence of our people.

Senator PURTELL. You feel this particular bill will do that?

Mr. JAMES. Well it is a big step in the right direction.

Now, of course, new bugs are being born every year, and the pesticides and so forth that knock some of them crazy today, another year from now they may be immune from it. We have discovered that, you see. So, as I say, I am guarding my statement and saying that this is a step in the right direction. Grange and the others may be in here in another year asking for some other changes to meet the changed situation that humans have no control over at all, you see, so we feel it is a very important step to simplify and stabilize the process that we have of guarding against poisoning and so forth.

There is no farmer, no manufacturer, that wants to deliberately make something that is going to poison the public, and there is nothing more discouraging to a producer, to a distributor than to have produced the stuff and have his investment in it, have his transportation cost paid and the distribution largely paid, and then have the products seized at the last and have them say that there is a speck or two of pesticide on that and we think it is dangerous, and they discard the whole lot. You see that is a costly proposition.

Senator PURTELL. It costs everybody.

Mr. JAMES. There is a lot of money in there. Now nobody is doing that deliberately. So we think there is a very important matter, and we wish to commend you folks, your committee for taking it in hand at this time and going along and giving it consideration and giving those other interests an opportunity of speaking.

Senator PURTELL. Don't ever commend your legislators for doing what they ought to do. If this is what we ought to do, that is our job, but we appreciate your feelings and so forth.

Mr. JAMES. We are delighted to see you giving it consideration.

Senator PURTELL. Now you had a prepared statement, and that will become a part of the record.

Mr. JAMES. That is right.

Senator PURTELL. Do you have any questions you wish to ask?

Mr. SNEED. No, sir.

Mr. REIDY. No questions.

(The prepared statement of Mr. James is as follows:)

STATEMENT OF DELOS L. JAMES, DIRECTOR, AGRICULTURE-INDUSTRY RELATIONS, THE NATIONAL GRANGE

A sound and practical pesticide policy which the provisions of S. 2868 and H. R. 7125 will make possible when enacted into law pertain to a matter in which members of the National Grange, both in the capacity of food and fiber producers and as large-scale consumers of such products, are vitally interested. All consumers, whether on the farm or in the cities and towns, have a very extensive interest in a pesticide policy that aids in the economical production of their food and fiber, and at the same time insures the highest possible degree of safety to health.

It is difficult to determine which of the two groups, the producer or the consumer, receives the most benefit from the use of pesticides, in view of the fact that the use of pesticides contributes so greatly to a low-cost food supply.

It often has been estimated that insects, fungi, and weeds cause many billions of dollars loss annually to the farmer. From the time of planting to the day of delivery of the product to the consumer it is a constant battle with the bugs and weeds and diseases, and were it not for the availability of an adequate and effective supply of pesticide chemicals the Nation's food supply would be greatly diminished and the cost of living, both for food and fiber, would be greatly increased.

To the foresight and practical understanding of Members of Congress there is due great credit for the aid they have provided by liberal appropriations over a long period of years for research work of various kinds, particularly that in the preparation and use of pesticides. To the manufacturers also, who have spent millions of dollars in experimental work in the development of more and better pesticide chemicals thus helping the American farmer to become the most efficient food producer in the world, we are greatly indebted. Throughout the entire development of the pesticide program the element of safety to the consumer has received close attention, so that along with the production of an abundant food and fiber supply at low cost there has been coupled with it the assurance to the consumer that his food supply is safe from a health standpoint regardless of the methods that are used in its production.

Fortunately new types of insecticides and fungicides are being developed in rather rapid succession and are readily accepted by farmers who should be free to use them with no limitations other than the extent that human health might be impaired.

With the great changes that have been taking place in farming methods it has been necessary for farmers to adjust rapidly to new circumstances. New types of machinery, fertilizer mixtures, hybrid seeds and others have made it necessary for the farmer who wished to stay in business to adapt his management program to the adoption of the newer methods among them the inclusion of the pesticide chemicals. This meant that farmers should not be restricted or delayed in the use of needed fungicides or insecticides; to do so could easily cause ruin or irreparable damage not only to the farmer but also to consumers. In this connection it must be recognized that it is in the interest of the manu-

facturer, the consumer, and the farmer to allow the most liberal and early use of new and improved products that safety will permit. Coupled with it there must of course be a careful scientific and unbiased determination of undoubted safety tolerances for the products, so that the consumers' health is protected beyond any doubt. However, the tolerances can be set so low that practical use is not possible. It is extremely discouraging to the producer or the distributor when, after taking all possible precautions, the product is condemned just as it is about ready for the consumer.

The bills S. 2868 and H. R. 7125, we in the National Grange believe, will help to eliminate the hazards that have been encountered in the application of the present law.

Needless to say we would not give the slightest encouragement to the use of a law that did not insure adequate safeguards in the production of a wholesome food supply. Neither do we favor a program that creates hardship with heavy expense and unbearable losses. The proposed legislation, we believe, will give consumers the safety they are entitled to, and at the same time permit farmers to apply the most advanced and practical methods of combating the widespread costly devastation of insect and other pests. It will also encourage and reward even greater research with the hope of eventual elimination of the more costly consequences of attacks from pests and weeds and insects.

The establishment of advisory boards or commissions to work with the Secretary of Health, Education, and Welfare, in studying the problems that arise with the use of a pesticide and make recommendations for setting a safe tolerance, is very desirable and would be conducive to more effective cooperation on the part of all concerned in administering and complying with the law. Since, at the very outset, the setting of a tolerance in the use of pesticides involves the interest and cooperation of consumers, manufacturers and farmers who use the pesticide, it is only reasonable to provide a method which will bring all interests into a workable unity in setting a safe tolerance without undue delays and facilitating its application with the fullest possible cooperation of all concerned.

We wish to compliment this committee for presenting for consideration such an important measure and which we hope you will approve for enactment into law.

With a constantly increasing population it becomes readily apparent that larger and larger supplies of food and fiber will be needed. With the increased competition for a food supply that quite likely will become more stabilized it can be expected that the cost of living will tend to rise unless some new developments take place which will make possible lower costs of production. In this field of insect and weed eradication there is a possibility that the present difficulties can be largely overcome, and in that event an important cost factor would be appreciably reduced.

We in the National Grange are especially pleased that this committee is making it possible to consider a matter that is so basically important to all citizens. We appreciate the opportunity to appear before this committee in support of the proposed legislation.

Senator PURTELL. Our next witness is Mr. Kris P. Bemis.

STATEMENT BY KRIS P. BEMIS, SECRETARY, POTATO DIVISION, UNITED FRESH FRUIT & VEGETABLE ASSOCIATION

Mr. BEMIS. My name is Kris P. Bemis. I come before you representing the United Fresh Fruit & Vegetable Association. This association, with headquarters in Washington, D. C., has nearly 2,000 members representing all the States. Its members are engaged primarily in marketing fresh fruits and vegetables; some of them are also producers of these commodities, which make up about 25 percent of our diet in this country.

The production of this important group of foodstuffs requires the continued use of pesticide chemicals to repel or kill insects and to protect against certain plant diseases. These chemicals are used from necessity; not from choice. An adequate supply of fresh fruits and vegetables cannot be maintained without them.

We favor the enactment of S. 2868, with the addition of certain clarifying amendments approved by the House Committee on Interstate and Foreign Commerce in its report (No. 1385) to accompany H. R. 7125. Most important among the reasons for our support are the following:

1. The bill treats pesticide chemicals in a practical manner by including them in a bill separate from legislation affecting chemicals in food.

2. The bill provides what we believe is a more workable procedure for establishing residue tolerances. The present procedure involves lengthy hearings and has not proved satisfactory. It is a matter of record that since 1950, public hearings for the purpose of establishing such official tolerances, costing nearly a half million dollars to Government and industry, have not yet resulted in their issuance. I would like to say, Senator, that is not said in criticism of the Food and Drug Administration.

The generally recognized reason for this situation is the cumbersome, time-consuming, and impracticable procedure prescribed by existing law. Since a large number of new pesticide chemicals have been and are constantly being developed, and some of them are known to be toxic, this situation calls for correction.

3. In addition to expediting the procedure for proclaiming tolerances, S. 2868 provides for appointment by the National Academy of Sciences of independent committees of scientific experts, to resolve highly technical and complex problems peculiar to this area of regulation. In connection with their work, the bill also has provisions protecting both the manufacturer and the user of pesticide chemicals against excessive delay in reaching decisions.

4. We believe the bill under discussion adequately protects public health. The Secretary of Health, Education, and Welfare is authorized to fix a tolerance at zero, and thus prohibit any residue on a fresh fruit or vegetable, when the scientific data submitted does not justify a greater tolerance. The Secretary may also, upon his own initiative, exempt certain pesticide chemicals from the need for tolerances, or place them under temporary tolerances, when in his judgment such action is desirable.

5. The controls provided by S. 2868 were first formulated into a bill fully 15 months ago. Since that time they have been carefully considered in the Department of Health, Education, and Welfare, in the Department of Agriculture, and by officials of the land-grant colleges, by farm organizations, and by industry groups. Many conferences have been held, many viewpoints reconciled, and many important improvements written into the measure. We think its passage will more adequately protect our supply of fresh fruits and vegetables, at the same time strengthening essential safeguards to public health.

Senator PURTELL. Thank you very much, Mr. Bemis.

Any questions?

Mr. SNEED. No questions.

Mr. REIDY. No questions.

Senator PURTELL. Our next witness is Mr John C. Lyan, legislative director, American Farm Bureau Federation.

I might say if I appear to be straining at times when you are giving your testimony, it is because I spent the last few days in hearings

having to do with liquor advertising, so occasionally in my thinking I have to make sure I am not confusing the two of them.

Mr. LYNN. I hope you do not.

Senator PURTELL. Although I understand that the bugs at times get about the same exhilarating feeling from pesticides as people do from liquor.

STATEMENT OF JOHN C. LYNN, LEGISLATIVE DIRECTOR, AMERICAN FARM BUREAU FEDERATION

Mr. LYNN. Sir, in order to save time, I would like to file my statement for the record and make a few brief comments.

Senator PURTELL. Your statement will become a part of the record.

(The prepared statement of Mr. Lynn is as follows:)

STATEMENT BY JOHN C. LYNN, LEGISLATIVE DIRECTOR, AMERICAN FARM BUREAU FEDERATION

We appreciate the opportunity to present our views on the proposed pesticide chemical legislation. As an organization representing 1,591,777 farm families in 48 States and Puerto Rico, the American Farm Bureau Federation is vitally interested in this legislation because of our desire to maintain practical pesticide control without jeopardy to the necessary food supply and the public health and welfare. We have participated in the development of H. R. 7125 and have actively supported its passage in the House of Representatives.

The maintenance of public confidence in the quality of food products and a continued supply of high quality food is essential. It is also important to recognize the necessity for continuel use of pesticide chemicals in agricultural production to insure adequate supplies of these high quality foods. The application of pesticide chemicals is essential to the economical production of agricultural commodities, particularly in the fruit and vegetable industry. One of the important factors in cost of production is the cost of the pesticide chemicals and their application. Producers do not incur the tremendous cost of these chemicals as a matter of choice, but as a matter of necessity. Unless pesticide chemicals are applied effectively, the producer will lose much or all of his crop before harvest, or the quality will be impaired. Adequate production of high quality foods may be impaired if unworkable regulations relating to the use of pesticide chemicals are put into effect.

Successful pest and disease control is a necessity from the standpoint of the producer. The establishment of proper tolerances is essential but it must be done with full recognition of the practical problems of growing and the preparation for market, as well as the need to protect the health of consumers.

In March 1953 the 5 commodity advisory committees of the American Farm Bureau Federation considered the pesticide problem and developed recommendations which were approved by the AFBF board of directors on April 2, 1953. Each of these 5 advisory committees—livestock, poultry, field crops, dairy and fruit and vegetable—includes representatives from the different areas in the country.

In approving the report of these commodity advisory committees, the AFBF board recommended that there be no change in the Federal Insecticide, Fungicide and Rodenticide Act of 1947. This act provides for the registration of pesticides by the United States Department of Agriculture. Registration of a pesticide depends upon proving that the product is safe and effective for the purpose for which it is to be sold with the burden of proof resting upon the manufacturers. This present registration program has proven satisfactory in its operation as far as pesticides are concerned. We recommend, therefore, that there be no change in the Federal Insecticide, Fungicide and Rodenticide Act.

In addition we have recommended that the Federal Food, Drug and Cosmetic Act be amended to provide for the establishment of residue tolerances for pesticide chemicals used in or on raw agricultural commodities in accordance with the objectives listed below, which are adequately provided for in S. 2868 and H. R. 7125.

1. Permit the filing of a petition with the Secretary of Health, Education, and Welfare proposing the issuance of a regulation establishing a tolerance for the pesticide chemical or exempting the pesticide chemical from tolerance requirements. Such a petition should contain data concerning the pesticide chemical's identity, application, toxicity and residue.

2. Require the Secretary to make public within a reasonable length of time a regulation establishing a tolerance, or exempting the pesticide chemical from tolerance requirements.

3. Provide that within this period the Secretary or persons filing the petition may request that the petition be referred to an advisory committee for study and recommendations, and that the Secretary, after consulting the committee recommendations, shall then publish a regulation concerning the pesticide chemical.

4. Allow recourse to the courts in case of appeal from any final regulation thus established.

5. Provide for the establishment of temporary tolerance on the products on which an experimental permit is used.

S. 2868 and H. R. 7125 recognize that the problems involved in the use of pesticide chemicals in or on food are very different from those involved in the use of intentional chemical additives. These basic differences are recognized in providing for a separate action in the Federal Food, Drug and Cosmetic Act relating specifically to pesticide chemicals used in or on raw agricultural commodities.

The establishment of a definite, workable procedure for establishing residue tolerances for pesticide chemicals is a very important feature of this legislation. The present procedure for establishing residue tolerances, which involves the holding of hearings to collect evidence, has not been satisfactory. In 1950 long and costly public hearings were held to gather information for the establishment of residue tolerances on pesticide chemicals used in the production of fresh fruits and vegetables. No tolerances as yet have been established as a result of these hearings. In order to avoid future delays, it is imperative that a definite procedure for the establishment of residue tolerances be provided.

Other provisions of the bill, which are also very essential, are designed to: (*a*) refer, if necessary, the tolerance petition to an advisory committee composed of particularly qualified experts; (*b*) allow anyone adversely affected by a tolerance issued to request a public hearing on the tolerance or portions thereof deemed objectionable; (*c*) provide the opportunity for recourse to the courts.

The enactment of this legislation will provide the protection from pesticide chemicals necessary for the public health and welfare. At the same time it recognizes the practical problems of agricultural producers through the establishment of a proper residue tolerance. The American Farm Bureau Federation recommends that the Federal Food, Drug and Cosmetic Act be amended relative to pesticide chemicals through the passage of S. 2868 or H. R. 7125. We urge early action by the Senate Committee on Labor and Public Welfare.

Mr. LYNN. We have participated with other interested groups in the development of this legislation and we recommend passage of the bills now under consideration. We feel it will accomplish the objectives which we have been seeking for some time.

With regard to the problem raised by Dr. Crawford, we generally support the fee idea. However, if it doesn't prove practical to do that at this session of Congress, we would certainly support supplemental appropriations in the neighborhood that he spoke of, 125 to 150 thousand dollars, in order to see that the provision of this legislation is adequately carried out.

That is all I have to say.

Senator PURTELL. Thank you very much.

Any questions?

Mr. SNEED. No questions.

Mr. REIDY. No questions.

Senator PURTELL. Our next witness is Dr. George C. Decker, section of economic entomology, State Natural History Survey division, Urbana, Ill.

STATEMENT OF DR. GEORGE C. DECKER, HEAD OF THE ECONOMIC ENTOMOLOGY SECTION, ILLINOIS NATURAL HISTORY SURVEY AND ILLINOIS AGRICULTURAL EXPERIMENT STATION, URBANA, ILL.

Dr. DECKER. My name is George Clemens Decker. I was born, reared, and obtained my early education in Michigan. I hold a B. S. degree in horiculture and M. S. and Ph. D. degrees in entomology, all from Iowa State College, Ames, Iowa.

For the past 30 years I have been engaged in research and administrative work in the field of economic entomology.

I served as research entomologist in the Iowa Agricultural Experiment Station from 1926 to 1944, and for the past 10 years I have been employed as entomologist and head of the economic entomology section, Illinois Natural History Survey and Agricultural Experiment Station.

I am a member of the American Association for the Advancement of Science, the Illinois Academy of Science, the agricultural board and the food-protection committee of the National Research Council, and the Entomological Society of America.

I appear before this committee as an interested individual scientist, but I am also authorized to speak in behalf of the North Central States experiment stations' regional committees on entomology and hazards associated with pesticide usage, and the Entomological Society of America, of which I am currently president-elect. Since H. R. 7125 and its companion bill, S. 2868, are for all practical purposes identical, I shall hereafter refer to this legislation as H. R. 7125.

Science and Government share a responsibility to maintain constant vigilance over our food supply. Entomologists and agricultural scientists generally are keenly aware of their responsibility to safeguard our food supply from objectionable contamination by either chemicals or filth. They know only too well that they must eliminate filth by controlling insects, plant diseases, and other pests, and this assignment must be fulfilled with a minimum of chemical contaimination and no hazard whatsoever to the public health. They know, too, that some sort of legislation is necessary to establish standards and to hold careless and irresponsible individuals in line. Thus we both welcome and endorse this type of legislation.

Many chemicals find their way into foods in one way or another. Some substances are deliberately added to specific foods to impart to them certain desirable qualities, such as flavor, color, and texture, or to aid in their preservation or processing. Others may find their way into foods in small amounts more or less incidentally in the production or processing of these foods. There are those who would lump these all together under the term chemical additives. The food-protection committee of the National Research Council, however, has from its very inception recognized a distinction between these two classes of additives and has consistently referred to them as "intentional chemical additives" and "incidental chemical additives," respectively. This bill, H. R. 7125, recognizes pesticides as a specific class of chemical additives which, because of their particular attributes, must be considered, and dealt with as a problem

separate from the intentional additives. The Congress has previously wisely recognized this necessary distinction in writing Sec. 406(a) of the present Food and Drug Act. I believe that the preservation of this distinction in science and in law is vital to agriculture and the maintenance of an adequate food supply.

Uncontrolled insects and plant diseases would largely eliminate the commercial production of such crops as apples, peaches, citrus fruits, tomatoes, and potatoes, to mention only a few, and would drastically curtail the production of many other major crops so necessary to the maintenance of an adequate and balanced diet. Therefore, any legislation that would unnecessarily hinder scientific progress and thus deny agriculture access to badly needed new chemical tools would jeopardize the future of our agricultural economy and the maintenance of an adequate, well-balanced food supply for the American public.

Each pesticidal chemical has its distinct advantages, disadvantages, and special uses. Therefore, just as the physician and the pharmacist require a generous assortment of pharmaceuticals for the compounding of prescriptions, so, too, the agriculturist and the pesticide dealer should have ready access to the largest possible assortment of chemicals so that they may likewise prescribe specific treatments to fit specific conditions.

Someone must pass judgment on the merits of each material proposed for use as a pesticide and upon such hazards as may be associated with its use. In this respect H. R. 7125 is commendable because it provides that the Secretary of Agriculture, who is in charge of the Government agency best qualified to supply and evaluate the necessary research data, shall pass judgment on the usefulness of a pesticide and the Secretary of Health, Education, and Welfare shall establish tolerances for pesticide residues on food that will adequately protect the public.

In evaluating the hazards involved in the use of pesticides, one must distinguish between the use or operational hazards, which might affect employees of the manufacturer, processor, or user, and the food-contamination hazards, which might affect the consumer of the end product. There are those who object to the use of pesticides on the basis of operational hazards but such problems are distinct from food-contamination hazards and have no bearing on this proposed legislation.

In evaluating the problem of chemicals in foods, the consumer should receive first consideration, but it is also important that the food producer be adequately protected against unwise, unnecessary arbitrary actions. When we consider that the use of pesticides is essential to the successful production of many crops and that at the same time foods must be protected from excessive or harmful contamination, it would appear that Congress acted wisely in establishing a dual system of controls by the Food and Drug Administration and the Department of Agriculture. I believe that both the Food, Drug, and Cosmetic Act and the Insecticide, Fungicide, and Rodenticide Act will be strengthened by the provisions of H. R. 7125 and certainly the continuance of the dual system of control appears to be desirable and proper. In this way all interests are more nearly assured proper and adequate consideration and the probability of unjustifiable arbitrary action by any one agency is greatly reduced.

Insofar as pesticides are concerned, perhaps the greatest weakness in the present Food and Drug Act lies in its cumbersome provision for the establishment of tolerances. In 1950 the Food and Drug Administration held lengthy hearings looking to the establishment of tolerances, but to date none has been announced. As a result, the uncertainties and suspense that prevail are at present retarding research in the insecticide and pest-control fields. Enactment of H. R. 7125 into law would greatly simplify procedures and should greatly reduce the cost of establishing tolerances. The schedule of deadlines set forth in the act would assure prompt action on each new problem by competent advisory committees, and if need be by the courts, will do much to stimulate research and restore mutual confidence between agriculture, industry, and Government.

Since I am in no sense an authority on legal matters, I have no comments on the wording of the proposed act. I do, however, recommend to you and urge your approval of the general substance of H. R. 7125 and S. 2868.

Senator PURTELL. Thank you, Dr. Decker.

We have Senator Cooper with us. Senator, do you have any questions or remarks you wish to make?

Senator COOPER. I think not.

Senator PURTELL. Has counsel any questions to help us better understand the pending legislation?

Mr. SNEED. No questions.

Mr. REIDY. No questions.

Senator PURTELL. Thank you, doctor.

Our next witness is Dr. W. C. Martin of New York City.

STATEMENT OF DR. W. C. MARTIN, NEW YORK, N. Y.

Dr. MARTIN. Mr. Chairman and Senators of this committee, I am a practicing physician in New York City interested in chronic degenerating diseases, and I wish to present the medical side of this question.

I wish to thank you for the privilege of presenting to you these suggested revisions to the bill S. 2868, a bill to amend the Federal Food, Drug, and Cosmetic Act with respect to residue of pesticide chemicals in or on raw agricultural commodities, and my reasons for considering these changes essential.

I have discussed this report with Dr. Morton S. Biskind, Westport, Conn.; Dr. Robert Mobbs, Aberdeen, N. C.; Dr. Granville S. Knight, Santa Barbara, Calif.; and Dr. Francis Pottenger, Monrovia, Calif., and have their permission to state that they concur with these opinions and share my anxiety.

Senator PURTELL. Doctor, when you say you are representing physicians, would you explain whether you are representing any organized group?

Dr. MARTIN. No; no organized group.

Senator PURTELL. Then those that you are representing are those that you have named; is that correct?

Dr. MARTIN. That is right, and they have given me permission to state that they agree with these opinions that I am to present and share my anxiety.

Senator PURTELL. Doctor you mentioned that your remarks are limited to representing those particular people.

Dr. MARTIN. That is right. There is no organization. These are personal remarks, yes.

Now we are not against this bill because we feel that somebody should do something to protect the consumer and the health of the people. The only objection we have is we feel that the bill is probably not strong enough. Of course, that is up to the Congress to decide whether they wish to make any amendments or not.

Senator PURTELL. You really have no objection to the bill as such, but you feel it doesn't go far enough; is that correct?

Dr. MARTIN. That is correct.

Senator PURTELL. You are in sympathy with the purpose of the bill?

Dr. MARTIN. Yes, with the intent of the bill. We feel that it is absolutely essential that such a bill should be passed, with a few recommended revisions that we have suggested.

Senator PURTELL. You will give us the benefit of those suggested amendments before you finish with your testimony?

Dr. MARTIN. That is right. Dr. Mobbs will appear next and he will discuss these revisions. What I wish to present here is the medical approach to the problem, the health problem involved in this, and Dr. Mobbs will discuss these various revisions that we recommend.

Senator PURTELL. Now you have a prepared statement?

Dr. MARTIN. That is right.

Senator PURTELL. Is it your desire to adhere to this prepared statement? You are free to do what you wish, but I want to make sure now if you are not going to read the prepared statement that it becomes a part of the record.

Dr. MARTIN. I would like to read the prepared statement.

For some years, as physicians, we have been concerned with the effects of these new pesticides on human beings both from the consumption of food products and water supplies contaminated with these pesticide chemicals, as well as with these substances as sprays in the home—our studies have convinced us that vast amounts of ill health and possibly increases in mortality rates are directly traceable to the use of these new pesticides.

Senator PURTELL. When you speak of publications, you mean publications by the individual doctors?

Dr. MARTIN. By the individual doctors.

Senator PURTELL. And again, you are representing no particular group other than those mentioned?

Dr. MARTIN. That is right.

We, therefore, believe it highly important for the public welfare that Congress has recognized the necessity for remedial legislation on this subject and that this is in process of enactment.

However, we have reviewed bill S. 2868 and believe it has a number of defects that should be corrected before the bill is enacted.

A reading of these revisions out of context may be misleading and a reading of the entire bill, which you are already familiar with, would be repetitious. Therefore, I wish to present herewith these revisions for your approval.

As I said, Dr. Mobbs is going to discuss these changes when he appears following me.

In the limited time available to me, I wish to present some reasons why this bill should give the consumer as much protection as possible.

As physicians, we are interested in the influence of these new pesticides on human health.

Briefly the following salient points are unanimously agreed upon by all concerned with this problem.

1. The chemicals used for insecticide sprays, such as chlorinated hydrocarbons and organic phosphorous compounds, are toxic.

2. The foods so sprayed contain a residual of these toxic chemicals in varying amounts.

3. These toxic chemicals are absorbed into the body when the foods so sprayed are consumed. I have proof of this fact in the form of 25 biopsies of human fat tissue, all except 2 showing the presence of the chemical DDT in the fat, and 6 cases had 5 parts per million or more, which is considered a toxic level by animal test.

These findings have been confirmed by similar tissue analysis by Dr. Pottenger, Dr. Lauge, and Dr. Knight of California.

Senator PURTELL. What were their backgrounds? Were they engaged in occupations where they might have absorbed this?

Dr. MARTIN. These people were from the city and their occupations precluded them from any contact with the chemical except by consumption of food, or possibly spray in their homes.

In other words, it was not an occupational hazard.

Now these findings have been confirmed by other physicians doing similar work.

Senator PURTELL. Wait a minute. I just want to explore this thing because this is a new approach. You went not only into the question of whether they might have been occupationally exposed to it. What about the use of such insecticides or pesticides for means of destroying pests or insects around the house? Did you follow that in these cases? Have you gone into the use of these strong solutions for the killing of flies, and so forth?

Dr. MARTIN. Every one of these containers are bombs, as they call them, that you use for spraying mosquitos during the summer months. Now practically all of them had 5 percent of DDT, and DDT, of course, is a long-acting chemical and is very readily absorbed by inhalation and through the skin, and is very dangerous both to the adult, and more so to children.

Senator PURTELL. We are considering here, of course, the question of food and vegetables.

Dr. MARTIN. That is right.

Senator PURTELL. I wonder if you have attempted to exhaust every possibility of their being exposed to these chemicals other than through food and vegetables?

Dr. MARTIN. We do know from the sale of these bombs and the use of them, especially in the summer, around the house is dangerous, and practically everyone uses them in their homes, or in the country anyway. Now I hope to make some further studies of that within the near future.

Senator PURTELL. So that this study is inconclusive?

Dr. MARTIN. No, I wouldn't say it is inconclusive. We do know these people, 23 out of 25, which is a very high percentage, already

have this accumulation of DDT in their system, and we have to assume they got it from the food or from the spray.

Now we have not been able to separate those two. Most likely if they live in the city it is from food.

Senator PURTELL. Senator Cooper would like to ask a question.

Senator COOPER. May I ask how many studies you made of individual people?

Dr. MARTIN. I made 25, but Dr. Pottenger and Dr. Lauge of the Public Health Service made over 100 studies, and Dr. Knight of California has made quite a few. I am not sure of the number, but they all find the same thing; that practically everyone today is already contaminated with DDT. We have it in our tissue right now.

Senator COOPER. Now you made 25 and someone else made over 100, and someone else made——

Dr. MARTIN. We will say probably 50 for Dr. Knight.

Senator COOPER. Is your testimony based upon the results from, say, 200 cases, or from only your 25?

Dr. MARTIN. My testimony is based on the results of all these findings. I have reviewed all the reports from the literature on this subject.

Senator COOPER. This bill is directed, as I understand it, at the chemicals which have been applied in the production of agricultural products?

Dr. MARTIN. That is right.

Senator COOPER. It hasn't anything to do with what a user of agricultural products, a consumer, might do in his home?

Dr. MARTIN. That is right.

Senator COOPER. You couldn't control that under this bill?

Dr. MARTIN. Well I would consider that most of these cases obtained it through the food because we have evidence that the residual is on the food.

Mr. Cox, chemist of the Beechnut Co., presented that to the Delaney committee.

Senator COOPER. I am trying to test, if you don't mind, the accuracy of your own statement.

Dr. MARTIN. That is perfectly all right.

Senator COOPER. I asked you how many cases it is based upon. Now could you say that the results you found were caused by chemicals which were used in the production of foods? Do you know that? Can you say that it was, or do you know whether it was caused by chemicals used in the production of food or chemicals that were applied in the house of the user?

Dr. MARTIN. I cannot exactly separate the two, but my particular cases came from the city, and in the city the people do not use these sprays so much in their homes, because there are not as many mosquitoes and flies in the city, as much as probably a group of people, say, in summer resorts would use them, so I would say my cases came from the food.

Senator PURTELL. It may be true about mosquitoes, Doctor, but is that true about flies? I must live in a peculiar city. We have a lot of flies there, and a lot of these insecticides are sold for the purpose of getting rid of flies, and they are so advertised. It has nothing to do with foods. People buy these sprays to spray around the home. It

can get on the food, I might say, if the food is exposed, and the containers, I believe, state that caution must be used in their use.

Dr. MARTIN. I would say that it would be of great advantage and it is of greater advantage if it said it should not be used.

Senator PURTELL. I know, but I am saying what the situation is, and not what we would like it to be. I am sorry, Senator, do you have further questions?

Senator COOPER. How do you determine, with the result of your study, which, as I understand, discloses in human tissue certain evidence of toxic chemicals, those absorptions came from toxic chemicals used in the production of food?

Dr. MARTIN. Well, as I said, that is well known and we have proof of the fact that practically most of the food does contain residuals of some of these chemicals.

Senator COOPER. You mean the food that these particular people were using?

Dr. MARTIN. That everyone uses. They eat the same foods from the market. I am speaking of food right on the market now.

In Texas the research chemist down there examined steaks. He took steaks, for instance, right out of the market. He found that the fat part of the steak contained 60 parts per million of DDT.

Senator COOPER. Take your 25 individuals. Did you make a study to determine or find out where they were buying their food? Did you look into that and did you examine the food that they were using?

Dr. MARTIN. No, I certainly did not. I followed or accepted the work that had been done on that problem by other people, which shows that food in the market today does contain these residuals.

Senator COOPER. Now I am not questioning what you say, but I think you have to have some facts to show it.

Dr. MARTIN. I said I hope to follow this up and get more studies. I agree other studies are necessary.

Foods free of these toxic chemicals are safer and, therefore, preferable for human consumption.

5. Chlorinated naphthalene, a type of chemical similar to that used on human foods, has caused the death of $4 million worth of cattle in the United States during the past few years through the consumption of food contaminated by its use. This fact was revealed in a recent report from the United States Department of Agriculture. Researchers at Cornell University and the Tennessee Agricultural Station identified chlorinated naphthalene as being the causative agent in the death of these cattle.

There is a difference of opinion between us and some other physicians and the United States Public Health Service.

It is their opinion, despite the evidence, that some of these chemicals do accumulate in the human fat tissue, and that similar type chemicals has caused the death of cattle, that there is no proof of chronic toxic effects in the human, and therefore the damage is negligible.

To date there have been no long-range toxicity studies made in respect to human health.

Our opinion is in direct opposition. We believe that the absorption of these extremely toxic chemicals by humans over a long period of time can cause serious tissue damage, especially in the liver. Animal tests have confirmed this reaction. When the liver is damaged it

sets off a series of chain reactions which eventually terminates in degenerative diseases.

Even today the rapid increase in degenerative diseases in the United States is a social, economical and medical problem. A long-range view of the health hazards with a continuous accumulation of these toxic chemicals in the body is beyond comprehension.

These chemicals are referred to as economic poisons in the field of agriculture.

In the field of human health it cannot be considered an economic problem—it can only be referred to by what the army calls a "calculated risk" in human lives.

In humans and animals consumed by humans as food the tolerance level of these chemicals should be placed at zero.

Senator COOPER. You mention chlorinated naphthalene. Is that a type of chemical that would only be found on food?

Dr. MARTIN. Chlorinated naphthalene is a classification of chemicals. That particular one that I made reference to there that killed all the animals, all the cattle, was reported by the United States Department of Agriculture. That apparently was an accident because it was in the oil and they used this oil on the food for some reason. Aldrin, dieldrin, and endrene are three chlorinated naphthalene isomers that are used on our foods, human foods. It is sprayed on all the time.

In fact, I was going to present in a few minutes a report from the Department of Agriculture showing that all these chemicals I am speaking about are sprayed on every article of food eaten by the human today.

Senator COOPER. I understand that, but my questions are directed to the fact that you found the statement that somebody else said about it. Now you examined 25 people?

Dr. MARTIN. That is right. At that time that was the only chemical we were able to check for. That was 2 years ago.

Senator COOPER. Did you determine the sources of their food and whether or not that food was sprayed by DDT?

Dr. MARTIN. No. As I say, they ate regular food from the market, but I did not examine the food they ate. I took my reference for that from the work of the other chemists that had examined large amounts of food in the markets and had determined that that food did contain a residue of DDT.

As I say, Mr. Cox of the Beechnut Co.—Beechnut Packing Co.—a baby-food company—examined all the food that came into the Beechnut Packing place from all over the United States, and it was his conclusion that these foods were contaminated and did have a residue on the foods that the packing company bought, and I accepted the evidence because he covered the food and examined the food all over the United States.

Senator COOPER. Will washing remove that residue?

Dr. MARTIN. His statement was that no process, washing or any other method, would remove the residue because some of it penetrated in the food itself and did not remain on the surface itself.

Senator PURTELL. May I inject a question? Was this residue you found injurious to health in all instances?

Dr. MARTIN. That is the opinion.

Senator PURTELL. Was that his opinion since we are using his testimony now or statement?

Dr. MARTIN. That was not his conclusion.

Senator PURTELL. What was his conclusion?

Dr. MARTIN. It was his conclusion, which he wanted to determine, and that was whether the food contained residue, and he determined that. He was a chemist and not a physician, so that ended his testimony.

Then the physician took it up, the toxicologist, and determined whether that residue was harmful to the human being. That is the subject that I took up in the study of these cases.

Senator COOPER. That particular residue?

Dr. MARTIN. Yes.

Senator COOPER. Was that residue analyzed and determined harmful? He certainly knew what it was, or did he just observe that it was there?

Dr. MARTIN. No, it was a chemical analysis.

Senator COOPER. All right, he knew what that was, and you are basing your opinion on what he found to be the composition of that residue; is that correct?

Dr. MARTIN. He found this residue on the food.

Senator COOPER. Did he spell it out?

Dr. MARTIN. Yes, he spelled them out and he presented this evidence to the Delaney committee that studied this problem 2 years ago. I do not have copies here with me but it is in the record of the Delaney committee.

Senator COOPER. When was that study made?

Dr. MARTIN. 1951.

Senator COOPER. Have you made a check of people who do not use processed foods, shipped foods—say, farm people? Has there been any check on those to make a comparison of people who used food which has been sprayed and people who use food as it comes out of the field or garden?

Dr. MARTIN. Well the spraying takes place while it is growing.

Senator COOPER. I know all that because I lived on a farm, but I know a lot of people grow their own food and don't go to all that trouble.

Dr. MARTIN. No, there hasn't been a study. Now this was done: The research man in Texas, a chemist, examined food that they grew experimentally by spraying it 1, 2 and 3 times. They grew wheat, corn, and some other foods, and they found the residue on the food, and they grew another section of food that they did not spray, and there was, of course, no chemicals in it. If it is not in the food, then it would not get in the human body unless you came in contact with it in another way.

Senator COOPER. Do you know whether any tests have been made of this character: Take a group of individuals and let them eat food upon which a residue has been placed. Has there been any such controlled experiment?

Dr. MARTIN. Not that I know of. In fact, it would be very difficult to get that amount of food to feed people that hasn't been sprayed. According to this report, there is no such thing, except in a very few instances where the man raises his own food and it hasn't been sprayed. That would be a very difficult test to do.

I know a test recently on feeding, testing the amount of chemicals that are absorbed by experimental tests—giving them so much and seeing how much is absorbed into the tissue, and they found that the controlled rats that were not supposed to have any chemicals in them at all also had evidence of the thing, and the only conclusion to draw was that the controlled food contained residue of these chemicals.

Senator COOPER. I want to ask one more question. Of course it is known that the use of these chemicals has increased tremendously over the last several years.

Dr. MARTIN. Yes.

Senator COOPER. And the farmers have found it of great value to them in production of crops.

Dr. MARTIN. That is right.

Senator COOPER. Do you think that sufficient tests have been made to determine the effect of these chemicals on human beings and on animals?

Dr. MARTIN. No.

Senator COOPER. The reason I ask you that is because if your own experiment, while a very worthy one, is typical, it seems to me it certainly is not very large in scope, and, secondly, you could not determine exactly whether or not these people had been eating food which had been sprayed, and, third, you didn't seem to determine whether there might be other sources from which toxic elements have entered the body.

I am not being critical, but it seems a small experiment.

Now this is a measure affecting agricultural production throughout the whole country. Would you say that the experiments are broad enough and determinative enough to impose this kind of a procedure?

Dr. MARTIN. Well, as I say, my cases were few in number, but Drs. Pottenger and Lauge have done many cases. I don't know the number that the Public Health Service and Food and Drug Administration has done in the service, but there is no one that has followed through and made these tests that did not get the same answer. Now whether they get it from the food or from the spray or a combination of the two, as far as the medical point of view, it doesn't matter. We have it in our system, and it is a toxic substance, and the question is, What is it going to do to us, and how can we stop this accumulation?

Now to follow that point one further step. The question of what the accumulation of this tissue will do to the body I think is pretty well demonstrated by the report that just recently came out on the effects, I am sorry to say, of cigarette smoking. That report came out on the sutdy of the effects of chemicals from cigarettes. When you smoke a cigarette you absorb certain chemicals—nicotine and tar and all those. Those are chemicals, actually, and the report has shown that the absorption of this over a period of 20 or 25 years has developed or is the cause of certain diseases such as heart disease or possibly cancer.

Senator PURTELL. Dr. Martin, may I interrupt a minute? Are you speaking now of the spray that is used on tobacco or are you speaking of chemicals and other properties that might be used in the preparation of tobacco for use not in growing, but in use? For instance, chlorinated products may be used. I don't know that they are. Are you talking about the sprays used on tobacco—that they contain these harmful chemicals?

Dr. MARTIN. No. I am just referring to the question of what affect this is going to have on public health, this accumulation of these insecticides in our system, and there has been no long-range studies made on this problem. The Public Health says and the Bureau of Agriculture says that they should be made, but they have never been made, so we do not have the answer of what effect they are going to have on us 10 or 20 years from now.

Senator PURTELL. But you did mention tobacco, and we are discussing a bill having to do with pesticides, and I am wondering if you are tying that up with pesticides used on the tobacco. Are you or are you not?

Dr. MARTIN. No. I was trying to bring out an answer to a question. The question was brought up, "Are these chemicals doing us harm or will they do us harm when they get into our tissue?" There has been no long-range study on the problem. The only similar condition that we had to compare with it is this report brought out by the American Cancer Society.

Now they don't break it down and tell you what the chemicals are, but they know from that study that certain chemicals are absorbed through cigarette smoking and they will do this to the human body. So, therefore, these pesticides are even more toxic than the chemicals in the cigarettes, so we can draw a conclusion if we are looking to the future, and we are interested in the health of the nation.

Senator PURTELL. I am sure we all are.

Dr. MARTIN. We can draw a conclusion that these chemicals already in our system will in time do the same thing, if not even worse.

Senator PURTELL. First, aren't we taking too much for granted? I am not defending the tobacco interests at all, but hasn't there been a great deal of difference of opinion among the experts as to the injurious affects of tobacco, assuming it is used in moderation, and number two, may it not be that these chemicals you are discussing, assuming they are there, may not be an inherent part of tobacco and not sprayed on or applied in any preparation of tobacco?

Dr. MARTIN. That is right. I was trying to point out the fact that chemicals of any nature of that type consumed by the human over a period of time, whether it is inherent in the tobacco or not, it is a chemical and it has toxic properties, the same as pesticides are chemicals and have toxic properties. That is the only comparison we have, and at the time of the report we did not have a long-range study of pesticides in the human, and I say the Public Health Service says it should be made, but they have not made it, and I was just using that as the only thing that we have to compare the possible results with.

Senator PURTELL. That in itself is not considered a conclusive study, is it?

Dr. MARTIN. There is always controversy.

Senator COOPER. I would say, too, as I understand the report, that there are many other studies on tobacco to determine what the exact result is.

Dr. MARTIN. I was trying to point two things out. I am not upholding tobacco or anything else, but that was the long-range study of the effect of certain chemicals on the human body.

Senator PURTELL. I am getting into a field I am a little ignorant of, but haven't you got, Doctor, a question of absorption and retention?

Dr. MARTIN. That is right.

Senator PURTELL. You might absorb, and if you don't retain, you will never build up, will you?

Dr. MARTIN. That is right, but, again, to my mind as a physician—you eat three meals a day, don't you?

Senator PURTELL. We hope to. In the Senate we don't always do that.

Dr. MARTIN. In other words, if this residue is on the food and is absorbed, the body must break that down and eliminate it, and if it is doing that three times a day, that is putting a very heavy load on the body, isn't it? It just doesn't disappear when it goes into the body. It has to be broken down, and it is mostly in the liver.

Senator PURTELL. I am not going to argue the point, but it doesn't follow that it is retained and built up.

Dr. MARTIN. The point I was trying to bring out is it isn't absolutely necessary to build it up if you are taking it in every day. There is always a certain level in there. Maybe it won't accumulate, but you are replacing it every day and it must be eliminated every day, and in that process there is going to be some damage done to your liver. The point I am bringing out here is once the liver is damaged, then you set off a chain of reactions that bring about chronic diseases, and that is the thing we have to look for in the future in the interest of the health of the nation, and I think we are all interested in that.

Senator PURTELL. You are very helpful. I think we interrupted you on page 5 of your report.

Dr. MARTIN. I think we have covered all of it in our discussion.

Senator PURTELL. I should have waited until you completed your testimony.

Dr. MARTIN. There is one point I want to bring out on this whole subject. On the medical side, I am looking at it, of course, in a completely different light, I will admit. The farmer has a problem, and I have a problem trying to keep my patients well. Now they look upon these poisons, these pesticides as what they call economic poisons, because they assist in their economy of growing the crops.

Now in the human I cannot consider or take into consideration the economic problem. I have to take into consideration the calculated risk in human lives and illness. The Army uses that term "calculated risk" in human lives. That is the angle I have to look at. The economy is secondary, but, as I say, that is my approach to the problem. The other side has their approach.

Senator PURTELL. I don't think it is fair, Doctor, to assume that the chief interest is economy and health is secondary. I am not at all sure you are right at that. As a matter of fact, I am sure you are not insofar as this committee goes, and I don't think that is true of any other group, the farmers or the producers of these foods or insecticides, or any other groups.

Mr. MARTIN. I am bringing out they use the term, and it is termed "economic poison." I am not accusing them of neglecting the health of the Nation. I didn't intend it that way, but if you are in a particular field, you are looking at it more or less along that line, and my side of the question is health, and I express my side and they have the right to express theirs.

Senator PURTELL. Now you state on page 4 that, of course there is a difference of opinion.

Dr. MARTIN. Yes.

Senator PURTELL. Would you say a very wide difference of opinion as to the effect of the use?

Dr. MARTIN. That is right.

Senator PURTELL. And you do say there is no long-rang study made, and therefore we don't know at the present time, but you are stating the results of your study and there may perhaps be evidence available of other types of studies that do not arrive at the same conclusion, but nobody has made any long-range study?

Dr. MARTIN. That is right; no one has made any long-range study. In other words, we are saying that these chemicals are there. The harmful affects are negligible, that is what the other physicians are saying, but according to my findings, the danger is not negligible because of the affect on the liver, and once that is damaged, then you get into the chronic degenerative diseases.

Senator PURTELL. What was the condition that was the cause of death or one of the major contributing causes of death in the cases of the 23 you spoke of?

Dr. MARTIN. There were no deaths in the ones I studied. They were living people.

Senator PURTELL. Health injury?

Dr. MARTIN. They were living. I mean part of the tissue came from the operations, you see. No; it was not the cause of death.

Senator PURTELL. I misunderstood. I had not had a chance to read the testimony before you appeared. I am trying to get it as you go along.

Dr. MARTIN. Many of these analyses had been made by just patients coming into the office and a piece of tissue taken out and examined, and sometimes they apparently had no effect from it at the time. No; there was no direct cause of death here in the cases I studied.

Senator PURTELL. Now I think you stated before you were not in opposition of this bill, but felt it did not go far enough, and you suggest the committee go even further in use of these insecticides.

Dr. MARTIN. In the control of them.

Senator PURTELL. Fine. Doctor, you have been extremely helpful and your information is going to prove helpful to other members of the committee. We will study the report carefully.

Dr. MARTIN. Thank you, Senator.

Senator PURTELL. Our next witness is Dr. Robert F. Mobbs, of Aberdeen, N. C.

Dr. Martin, you had a display of some kind. Did you wish to leave that with us? Do you want that to become part of the files?

Dr. MARTIN. I would like it to. It is the only copy I could get of it. I would like to leave that on record.

Senator PURTELL. It will become part of the files.

Dr. Mobbs, is it your desire that this statement be incorporated and you just refer to it, or do you wish to read it? You are at liberty to do whatever you wish.

Dr. MOBBS. I prefer it just be made part of the record and we just discuss the problem.

Senator PURTELL. All right, Doctor.

(The prepared statement of Dr. Robert F. Mobbs is as follows:)

STATEMENT OF R. F. MOBBS, M. D., ABERDEEN, N. C.

I endorse the principle of enacting a pesticide-residue amendment to the Federal Food, Drug, and Cosmetic Act in the interest of the public health. However, I question whether S. 2868 in its present form would provide adequate safeguards or protection against the marketing of foods containing potentially poisonous or deleterious pesticides. It is well to note that this bill only proposes to solve part of the problem of pesticide control and that the problems posed by pesticides in processed food and those used in the home would still remain without adequate control.

To adequately strengthen S. 2868, a needed minimum of three changes are necessary. The first change has been brought out by Mr. Charles Crawford, Commissioner, Food and Drug Administration, in testimony on the original version of this bill July 14, 1953. Two of these changes were officially suggested by Mr. Nelson A. Rockefeller, Acting Secretary of the Department of Health, Education, and Welfare. Mr. Rockefeller made these suggestions in a report submitted at the hearing on H. R. 7125 which is similar to S. 2868.

Mr. Crawford testified as to the need to keep this bill in line with the basic principle of the food and drug law which is that added poisonous and deleterious substances—and most poisons fall into this class—must be kept out of foods unless they are required in the production or cannot be avoided in good manufacturing practice. S. 2868 violates this declared public policy of the Food and Drug Act as passed by Congress. S. 2868 would substitute for that test the test of agricultural usefulness, the determination of which would be left to the Secretary of Agriculture.

The importance of keep this bill in conformity to the rest of the Food and Drug Act is seen by noting the conclusion of Mr. Crawford's testimony.

"So we believe that the policy of the Congress in excluding poisons not needed was eminently sound and we think that the soundness of that is being more effectively demonstrated today than it was at the time this enactment was passed because of the increasing complexities in the production of our foods and the increasing number of new substances of one kind or another which are finding their way into our food supplies through developments in food technology."

I suggest, therefore, that the committee amend S. 2868 in the following manner so that it will conform to the declared public policy of the Food and Drug Act as originally passed by the Congress. The suggested amendments are as follows:

1. In line 2 of page 4, after the word "health," change the period to a comma, and add the following "if the Secretary determines that each pesticide chemical is required in the production, storage, or transportion of raw agricultural commodities."

2. The period at the end of line 18 on page 4 should be changed to a semicolon and the following added "and (2) refuse to establish a tolerance if he determines that the pesticide chemical is not required in the production, storage, or transportation of raw agricultural commodities." In this connection, "(1)" should be added after the word "may" in line 14 of page 4.

3. The words "he determines that" should be added after the word "when" in line 22 of page 4. The period after the word "health" in line 23 of page 4 should be changed to a comma, and the following added "and that the pesticide chemical is required in the production, storage, or transportation of raw agricultural commodities."

4. The period after the word "petition" in line 23 of page 5 should be changed to a comma, and the following added: "and showing that the pesticide chemical is required in the production, storage, or transportation of raw agricultural commodities."

5. A comma should be added after the word "supply" in line 12 of page 15, and the following should be added: "to whether the pesticide chemical appears to be required in the production, storage, or transportation of raw agricultural commodities."

The first change suggested by Mr. Rockerfeller emphasizes the need to more closely mesh Sb. 2868 with the basic insecticide registration law which is found in the Federal Insecticide, Fungicide, and Rodenticide Act. Mr. Rockerfeller's suggestion means that the wording of Sb. 2868 should be changed so that ambiguous langaue is eliminated. The Department of Health, Education, and Welfare requested through his statement that the fact be spelled out in the bill that—

"insofar as economic poisons which have not been previously registered under the Federal Insecticide, Fungicide, and Rodenticide Act are concerned—registration under the act must be refused until a tolerance (or exemption) under the bill for the pesticide chemicals involved, relating to such agricultural use, has been determined and there is adequate evidence that the treated agricultural product will not bear a residue in excess of the tolerance." The bill as written makes the above safeguard depend entirely on a matter of interpretation of ambiguous language by the Department of Agriculture.

The importance of clearly meshing Sb. 2868 and the Insecticide, Fungicide, and Rodenticide Act is vitally important since basic marketing control of insecticides lies in the Department of Agriculture under this act.

Representative Miller, author of H. R. 7125 and S. 2868, at the hearing on H. R. 7125 stated, "It is to be noted that the functions of the Secretary of Agriculture under this bill are in addition to those prescribed for the administration of the Federal Insecticide, Fungicide, and Rodenticide Act. * * *Nothing in this bill is intended to change or modify in any way this act and the interpretations thereunder."

The wisdom of allowing the insecticide act to remain unchanged and unmodified in any way is open to question, as may be seen by noting the testimony of Mr. Charles Wesley Dunn, authority on the food and drug law, as recorded on page 664 of the report made by the select committee to investigate chemicals in food.

Dr. Dunn stated, "The Secretary of Agriculture has the authority to deny the registration of an insecticide that he deems not in compliance with the act from the standpoint of public welfare. *But the act contains a joker, which I mentioned, and it is that the Secretary must nevertheless register a product if the manufacturer of it insists on it. How that provision got into the act, I don't know, but it is there.* [My emphasis.]

"The Secretary may then cancel its registration, where he deems this necessary to protect the public, but I understand that he has not canceled the registration of any economic poison used as a pesticide in growing natural food."

Again turning to the testimony of Mr. Rockefeller—he feels that S. 2868, in its present form, will not be interpreted to call for the issuance of a tolerance on those pesticides registered prior to the effective date of the bill. He suggests that the bill be amended to specifically call for obtaining a tolerance or exemption for economic poisons registered prior to the effective date of the bill. He would, however, allow a grace period of 1 year in which previously registered pesticides could obtain a tolerance.

Actually, a condition has existed for the past 10 years in which the entire population of this country served in effect as guinea pigs while the safety of food containing, not one, but many, potentially poisonous pesticides was being determined. Realization of this fact by the Delaney committee led to the following statement in the majority report No. 2356 of June 30, 1952:

"In conclusion, the evidence has convinced your committee that chemicals have been utilized in and on the food supply of the Nation without adequate and sufficient testing of their possible long-range injurious effects; that the public is entitled to greater protection with respect to the foods it must necessarily consume; and that such protection is not afforded by existing legislation, under which the Government may take no action until after the food has been placed upon the market and injury may have occurred. Your committee recommends, therefore, that the Federal Food, Drug, and Cosmetic Act be amended to require that chemicals employed on or in foods be subjected to substantially the same safety requirements as now exists for new drugs and meat products."

Amendment of S. 2868 to make it mandatory that previously registered pesticides obtain a tolerance is most important since it is because of the recognized danger in many of the pesticides registered during the past 10 years that S. 2868 was created.

DISCUSSION

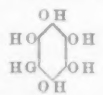
I submit this statement with a deep feeling of humility because I feel sure that the most tragic assumption that I have ever made was to assume that surely in this country no untested toxic chemical would ever be allowed to contaminate the air we breathed or the food we ate; many people still retain a complete faith in this assumption. For this reason it seems self-evident that this addition to our basic food protection law—S. 2868—should be made as strong as possible.

Appended to this statement is an article by Mr. Drew Pearson in which are accurately quoted statements that I made last July 14 at a hearing of the Interstate and Foreign Commerce Committee of the House of Representatives. This article is introduced to provide background data on insecticide toxicity.

To show how a pesticide may be useful but not necessary, one may consider the pesticide known as lindane. Lindane vaporizing devices are thought to be useful in dairy barns, restaurants, and food-packing establishments. Recently, Dr. Milton Fisher, chief of the milk control section for the State of Missouri, investigated this problem. He checked with Dr. H. E. Whitmire, president of the Whitmire Research Laboratories in St. Louis. These two men found that lindane is not needed in dairy barns for the production of milk as there are other substances that the Food and Drug Administration has found much safer and equally efficacious. Missouri State health officials banned the use of lindane vaporizing devices in dairies.

Lindane, however, still is widely used. The Beechnut Packing Co. once sent me a list of some 75 reports taken from the scientific literature, which reports listed the contamination of all sorts of fruits and vegetables with BHC or lindane.

Lindane is also an example of a previously registered secticide for which a tolarence should be useful in foods. Before eating or breathing lindane one might like to give consideration to the fact that lindane is thought to destroy the beneficial effects in food and in the body of the vitamin inositol. Inositol is important for normal growth and was once written up in Newsweek as a possible "Fountain of Youth Drug" because of its beneficial effects on arteriosclerosis. The structural similarity between the wonder drug inositol, and superpesticide, lindane, is obvious.



Inositol $C_6H_6(OH)_6$
vitamin

Lindane $C_6H_6Cl_6$
pesticide

Lindane is capable of producing abnormal cell formation and along with the other chlorinated hydrocarbon pesticides, DDT, aldrin, dieldrin, toxaphene, and chlordane should be investigated for carcinogenic potential. These pesticides should be investigated as possible causative agents in cancer of the lung—in tobacco and air they contaminate more millions of people than any other toxic substances.

Inositol, on the other hand, has been shown by Dr. Herbst and Dr. Bagley of George Washington Medical, Washington, D. C., to have a beneficial effect on cancer.

Inositol and lindane, if intensively studied, could reveal many secrets of body growth and metabolism.

[Reprinted from the Charlotte (N. C.) News, Wednesday, August 19, 1953]

DREW PEARSON'S MERRY-GO-ROUND: DOCTORS WARN OF POISONOUS CROP SPRAYS

WASHINGTON.—One of the many things vitally affecting the public which didn't leak out during the late lamented Congress, was a hassle over fruit sprays, which one prominent doctor warned may be slowly poisoning the American people. These poisons, inhaled while spraying or eaten as residue on fruits and vegetables, accumulate in the system and may take as much as 10 years off a person's life, it was testified.

The warning was given by Dr. Robert Mobbs of Aberdeen, N. C., who told how he had spent 5 years intensely studying the problem after a child in his hometown had died of what he was convinced was pesticide poisoning. He cited one chemical spray, benzene hexachloride, which was found in tests to produce abnormal, cancerlike cell growth. Yet it is used to spray on crops, to dust troops in Korea, and in vaporizing devices, to air out homes and restaurants.

He declared that doctors and chemists have prepared reports on insecticide toxicity, but added ominously: "I think that these reports have been largely ignored, minimized, and suppressed."

Testifying before the House Interstate and Foreign Commerce Committee, Dr. Mobbs appealed to the Congressmen to put teeth in the laws regulating pesticides and insecticides.

Instead of doing so, the committee boosted a bill, introduced by GOP Congressman A. L. Miller of Nebraska and endorsed by the insecticide companies, that would leave it up to the manufacturers to test their own pest killers and submit their findings to the Government. Following this, the Food and Drug Administration would be given 60 days to decide, on the basis of the manufacturers' report, how strong a dose could be sold to the public.

FOOD AND DRUG OBJECTION

This bill brought this warning from Food and Drug Commissioner Charles Crawford: "Irresponsible operators might submit the sketchiest and most inadequate toxicological data." Yet the Government would be forced to fix the dosage, Crawford said, and issue it "within the rather brief time limit prescribed."

"We believe it essential to public health and highly advantageous to the industry, that tests, deemed adequate by a competent and unbiased scientific body, be required of all new pesticides," the food and drug chief urged.

The real danger, he pointed out, was that "you might find yourself with a meal that contained 20 different poisons, none of which by itself would hurt you, but all of which put together might be getting into the critical zone."

Most startling testimony, however, came from Dr. Mobbs.

PERFORATED STOMACHS

"We now know," he declared, "that many foods are contaminated by these insecticides and that human tissue itself now contains DDT and probably other insecticides and yet no one knows what the ultimate effect will be * * *.

"One baby food company has tried to get away from having insecticides in those foods they are preparing for babies," he added, "yet today they are about ready to abandon that search. They just can't find foods in sufficient quantity that do not contain some insecticides, yet they do not know what the result, the ultimate result, will be."

Dr. Mobbs told how he began his investigation 5 years ago after an insecticide plant in his community started mixing a dust for boll weevil spraying.

"The air was constantly permeated with insecticides. Many people became ill, and viruslike illness was rampant throughout the town * * *," he related. "There was a child living in a home adjacent to this insecticide mixing plant, who died suddenly of a viruslike infection, died in convulsions. This substance was released for widespread use where it contaminated the air we had to breathe, and yet it had been untested in that medium."

"I found," he continued, "that if you fed it to an animal, it would kill that animal in convulsions. This child that died had also suffered a perforation of the stomach. Later it was found in experiments that animals suffered perforation of the stomach. So I felt that this child's death was probably due to this chemical."

The Aberdeen, N. C., physician told of another patient who "tried to use himself as a guinea pig to see what the effects of the insecticide would be. He had a coronary heart disease that seemed to be definitely aggravated by exposure to the dust, and on his death, we found DDT in his tissues."

MAY PRODUCE CANCER

Dr. Mobbs was probably most "shocked," however, by the fact that "the American Cancer Society not too long ago gave a grant to the professor of biochemistry at Columbia, in which he used benzene hexachloride to produce abnormal cell formation or cancerlike changes." "Yet at the same time," Dr. Mobbs warned, "we are using benzene hexachloride or lindane in a fashion in which it contaminates crops, gets into the milk supply. It is now used in many restaurants and in home vaporizing devices. It is used to dust troops and prisoners in Korea * * *."

"I feel," Dr. Mobbs added, "that attempts have been made to minimize the toxicity of these things."

NOTE.—In fairness to the insecticide manufacturers, it should be pointed out that most of them scrupulously test and label their products to safeguard the public. Without these poisonous sprays, insects and rodents would literally spoil most of the country's food supply. For example, apples alone must be protected

from over 200 insects. Yet insects develop an immunity to sprays, and it constantly takes more poison to kill them. Insects which once died at a whiff of DDT now are immune to it.

STATEMENT PROPOSING REVISIONS OF S. 2868 (H. R. 7175) (TO AMEND THE FEDERAL FOOD, DRUG, AND COSMETIC ACT WITH RESPECT TO RESIDUES OF PESTICIDE CHEMICALS IN OR ON RAW AGRICULTURAL COMMODITIES)

Presented before the Subcommittee on Health of the Senate Committee on Labor and Public Welfare, June 23, 1954

For some years the undersigned have been concerned with the effects of pesticides on human beings, both from the consumption of food products and water supplies contaminated with pesticide chemicals, as well as from contact with these substances in the general environment. Our studies have convinced us that a vast amount of ill health and increases in mortality rates are directly traceable to the use of the new pesticides (copies of our publications relating to these studies are submitted herewith). We therefore believe it highly important for the public welfare that the Congress has recognized the necessity for remedial legislation on this subject and that this is in the process of enactment.

However, we have reviewed S. 2868 and believe that it has a number of defects that should be corrected before the bill is enacted. One of these defects, it appears to use, would completely invalidate the entire bill, if it is permitted to stand. On page 3, lines 14 to 19, it is stated:

"While a tolerance or exemption from tolerance is in effect for a pesticide chemical with respect to any raw agricultural commodity, such raw agricultural commodity shall not, by reason of bearing or containing *any added amount* [our emphasis] of such pesticide chemical, be considered to be adulterated * * *"

We respectfully suggest that the intent of the bill would be fulfilled if the words "within such tolerance" were added after the word "chemical" in line 18 of page 3.

Other changes which we believe would make for more nearly adequate protection of the interests of the consuming public are:

Delete the word "pesticide" in line 25 of page 2 and in line 25 of page 3.

In line 2 of page 4, after the word "health", change the period to a comma, and add the following: "if the Secretary determines that such pesticide chemical is required in the production, storage, or transportation of raw agricultural commodities."

Delete the clause "(1) to the necessity for the production of an adequate, wholesome, and economical food supply;" in lines 4 and 5 of page 4.

The word "related", in line 7 of page 4, and the words "that are poisonous or deleterious," in line 8 of page 4, should be omitted.

The period at the end of line 18 on page 4 should be changed to a semicolon and the following added "and (2) refuse to establish a tolerance if he determines that the pesticide chemical is not required in the production, storage, or transportation of raw agricultural commodities." In this connection, (1) should be added after the word "may" in line 14 of page 4.

The words "he determines that" should be added after the word "when" in line 22 of page 4. The period after the word "health" in line 23 of page 4 should be changed to a comma and the following added: "and that the pesticide chemical is required in the production, storage, or transportation of raw agricultural commodities."

The period after the word "petition" in line 23 of page 5 should be changed to a comma, and the following added: "and showing that the pesticide chemical is required in the production, storage, or transportation of raw agricultural commodities."

There should be added after the word "or," in line 14 of page 6, the words "refusing to establish such a tolerance, or".

There should be added after the word "petition," where it first appears, in line 18 of page 6, the words "or any other person adversely affected".

After the word "petition," in line 23 of page 6, there should be added the words "or any other person adversely affected."

The word "sixty," in lines 8 and 14 of page 7, should be changed to "ninety."

Line 24 of page 7 should be revised to read: "which it is so certified as useful, or refusing to establish such a tolerance; or."

There should be added after the word "made," in line 20 of page 8, the following: "available to the person filing objections with the Secretary, and shall be made."

There should be added after the comma, after the word "proposal" in line 5 of page 10, the following: "or any other person who may be adversely affected,".

The word "sixty," in lines 11 and 17 of page 10, should be changed to "ninety." Line 25 of page 10 should be revised to read: "in the proposal or refusing to establish such a tolerance, or exempting the pesticide chemical from the necessity of a tolerance".

Paragraph (f) on page 11 should be omitted. There is no reason why the data should be kept confidential.

The period after the word "colleges" in line 23 of page 11 should be omitted, and the following added "and one or more persons selected by the Secretary to represent the consuming public."

The words "or member thereof" should be added after the word "committee," in line 17 of page 12.

The words "or refusing to establish" should be added after the word "establishing", in line 9 of page 15.

A comma should be added after the word "supply," in line 12 of page 15, and the following should be added: "to whether the pesticide chemical appears to be required in the production, storage, or transportation of raw agricultural commodities."

With these changes, the consumer would, we believe, have reasonable protection against contamination with deleterious substances of "raw agricultural commodities," that is, contamination on the farm. However, this is only one of many sources of contamination. Storage bins and storage warehouses are regularly protected against insects through use of these poisons; grocery stores throughout the United States regularly spray exposed foods with them, institutional personnel regularly use these poisons in their kitchens and consumers use them in home and garden. We therefore suggest that S.2868 be amended to contain a provision prohibiting the marketing in interstate commerce of pesticides for home, garden, store, warehouse, factory, or institutional use, which pesticides are recommended for food crops or food protection, when such use can produce contamination of food in any concentration, if the tolerance is zero, or in excess of the established tolerance.

Recently, in New England, through the combined activities of the United States Department of Agriculture and State governments, 1,500,000 acres were sprayed with DDT by airplane, allegedly for the control of gypsy moth in the forests. Unfortunately, such spraying is necessarily indiscriminate and, as a result, thousands upon thousands of acres of farmland (crops, fodder, and animals alike) were contaminated with uncontrolled amounts of DDT, without even consulting the farmer's wishes. The quantities of DDT employed were sufficient to kill thousands of fish and other aquatic life along affected streams and caused widespread outbreaks of illness among humans in the affected areas. (See attached items from the Newtown, Conn., Bee, and copies of correspondence with officials of the States of Connecticut and Massachusetts.)

What recourse has a farmer who ships in interstate commerce, food containing poison prohibited by the Government, when the food is contaminated by the Government itself without even consulting the wishes of the farmer? Surely, this is a problem for Federal control. The pesticide applications have widespread harmful implications for the human population and for ecology that are not limited to State boundaries; the quarantine measures themselves directly cross State boundaries; drift of poisons from airplane applications has been shown to carry on the wind from 4 to 15 miles, which also does not respect State boundaries. Further, contamination of the atmosphere on so vast a scale is surely a problem for Federal control. We respectfully suggest therefore that S.2868 be amended to forbid the contamination of crops sold in interstate commerce, either directly or through drift from adjacent areas, in the application of governmental quarantine activities with any pesticide whatever in the case of crops grown without spray residue, or, taking into account pesticides that may have been applied by the farmer himself, with amounts of pesticides in excess of tolerances established by the Secretary of Health, Education, and Welfare, or with any amount whatever, if the tolerance is zero.

Respectfully submitted.

W. CODA MARTIN, M. D., *New York, N. Y.*
MORTON S. BISKIND, M. D., *Westport, Conn.*
ROBERT F. MOBBS, M. D., *Aberdeen, N. C.*

[From the New York World-Telegram and Sun, Tuesday, September 15, 1953]

M. D. FEARS DDT IS POISONING NATION, FINDS TRACES IN 23 OF 25 HUMANS

(By De Los Smith, United Press science editor)

A New York physician subjected samples of fatty tissue taken from 25 New Yorkers who had never handled DDT, except perhaps momentarily, to chemical analysis and found DDT in 23.

This caused the physician, Dr. W. Coda Martin, to ask fellow practitioners last night—"What will happen to the entire population in 10 to 15 years from now?"

Addressing the New York chapter of the American Academy of Nutrition, Dr. Martin said his patients had accumulated DDT in their bodies from DDT insecticides or in the food they ate.

POISONOUS TO MAN

DDT is poisonous to man as well as to insects, he said, adding that the use of DDT and its chemical relatives in agriculture now totals well over 250 million pounds a year and is increasing.

He said that because the chlorinated hydrocarbons—of which DDT is one—"are known to be accumulative in animal and human fats it is essential that further studies be made of the chronic toxic effects on the human in order to protect the future health of the Nation."

"Chronic poisoning [from chlorinated hydrocarbons] produces severe degenerative changes in the liver, the most severely damaged of the vital organs," he said. "Although DDT produces serious morphologic [structural] changes in virtually every organ of the body, its most disturbing effects are those of the nervous system."

WARNS OF LIVER DAMAGE

Dr. Martin said laboratory analysis showed that the DDT level in the 23 out of 25 human fatty tissue samples examined ranged from 1 part per million to 11 parts per million.

"In the face of all these devastating facts, DDT and other newer and more toxic insecticides are being used each year in greater and greater quantities on our food. If each year the liver damage is increased and its efficiency decreased, what will happen to the entire population in 10 to 15 years from now?"

In response to an inquiry from this reporter, Dr. Martin said his views appeared not to be those of a majority of physicians who have dealt with DDT poisoning in humans. He said he conferred recently in Washington with Dr. Weyland J. Hayes, Chief Toxicologist of the United States Public Health Service, and Dr. Bernard Davidow of the United States Food and Drug Administration.

The three of them agreed, he said, on these points: Insecticide chemicals such as chlorinated hydrocarbons and organic phosphorus are poisonous; food sprayed with them have a residue of "varying amounts"; these poisonous residues are absorbed into the human body with the food.

"But, Dr. Hayes was of the opinion that there is little proof of toxic effects in the human and, therefore, the danger of chronic toxicity is negligible," Dr. Martin said. "My opinion is in direct opposition to Dr. Hayes.

"My opinion is that even a little poison on our food is too much, especially when that poison is accumulative—when the body retains and stores it. Food free of these chemicals can be grown and is available but not in sufficient quantity for all. Why not?"

LABORATORY OF INDUSTRIAL HYGIENE, INC.
New York, N. Y.

Sample: Fatty tissues
Received: December 13, 1951 to January 24, 1952 from Dr. W. C. Martin
Test: DDT Analysis
Methods: DDT in milk and fatty materials Ind. and Eng. Chem., Analy. Ed., vol. 19, P. 51. Calorimetric Determination of DDT Ind. and Eng. Chem., Anal. Ed., vol. 18, P. 272.

Result: Samples Labeled—

	DDT parts per million
1. Male, 63, hernia	2
7. Male, 41, clerk, barbiturate poison	1
4. Male, 25, nurse, Peek	4
5. Male, 59, waiter, Jones	7
8. Male, 60, unemployed	8
9. Male, 50, laborer	9
10. Female, 65, housewife	5
11. Male, 60, alcoholic	2
12. Male, white, unemployed, accidental	0
13. Male, white, 60, waiter, accidental	3
14. Male, white, 65, retired	11
15. Male, colored, 50, laborer, coronary thromb	3
16. Male, white, 45, coal miner	1
17. Male, white, 65, cirrhosis of liver	3
18. Male, white, 18, student	2
20. Male, colored, 30, laborer	0
22. Male, 40, dock worker	2
23. Female, white, 25, pregnancy	1
24. Female, white, 30	3
25. Male, white, 40, laborer	2
26. Male, white, 45, dishwasher	2
27. Female, white, 36, housewife	3
28. Female, 37, housewife	6
39. Female, white, 50, factory helper	3
30. Male, white, 30, clerk	5

K. GEORGE FALK, *Director.*

Report submitted, February 21, 1952

[Reprinted from The American Journal of Digestive Diseases, Vol. 20, No. 11, November 1953, pp. 331–341]

PUBLIC HEALTH ASPECTS OF THE NEW INSECTICIDES

(Morton S. Biskind, M. D., Westport, Conn.)

In 1945 against the advice of investigators who had studied the pharmacology of the compound (70) and found it dangerous for all forms of life, DDT (chlorophenothane, dichlorodiphenyl-trichloroethane) was released in the United States and other countries for general use by the public as an insecticide. Contrary to popular opinion, DDT was not the first of the chlorinated cyclic hydrocarbons to be studied for its pesticidal properties, nor indeed is it the most potent compound of the group. In 1934, four years before DDT was introduced for this purpose in Switzerland, an American entomologist (17–19) reported on the insecticidal properties of the chlorinated naphthalenes, compounds shown shortly thereafter to be extremely toxic for man (53, 45).

Soon after the introduction of DDT for widespread use as a household, public health and agricultural insecticide, it became evident that virtually all forms of insects were propagating strains completely resistant to this compound. This led to a frantic search for more and more potent insecticides (which also turned out to be more and more toxic for animals and man). One after another new compounds were introduced, the total list being very long indeed. In addition to numerous variants of DDT itself, in widespread use appeared chlordane, toxaphene (chlorinated camphene), benzene hexachloride (hexachlorocyclohexane) and its gamma isomer, lindane (gammexane), heptachlor, and finally, going full circle, the incredibly deadly aldrin and dieldrin, both chlorinated napthalenes (31, 33–37, 46, 52). In addition, the organic phosphorus compounds, closely related to the "nerve gases" of chemical warfare and lethal for man in minute doses, have also been widely used in agriculture—parathion, tetraethylpyrophosphate (TEPP), hexaethyltetraphosphate (HETP), malathion and others (22, 32).

In 1950, a year in which more than 200 million pounds of insecticides were used in agriculture alone in this country, investigators of the Federal Food and Drug Administration announced:

"The finding of hepatic cell alteration at dietary levels as low as 5 p. p. m. of DDT, and the considerable storage of the chemical at levels that might well occur in some human diets, makes it extremely likely that the potential hazard of DDT has been underestimated." (68)

In 1951, the United States Public Health Service (49) pointed out:

"DDT is a delayed-action poison. Due to the fact that it accumulates in the body tissues, especially in females, the repeated inhalation or ingestion of DDT constitutes a distinct health hazard. The deleterious effects are manifested principally in the liver, spleen, kidneys, and spinal cord.

"DDT is excreted in the milk of cows and of nursing mothers after exposure to DDT sprays and after consuming food contaminated with this poison. Children and infants especially are much more susceptible to poisoning than adults."

And the next year the United States Department of Agriculture (108) indicated that the chlorinated naphthalenes had been implicated as a cause of "X disease" (hyperkeratosis) in cattle, a usually fatal malady that has destroyed many thousands of animals in the United States in recent years (10,000 were reported from Texas alone in March 1953) (119). This represents not only a multi-million-dollar loss to cattle-raisers but as will soon be evident, a serious hazard to the public that consumes meat, milk, and animal fats. Just when chlorinated naphthalenes were first used in agriculture is not indicated in published reports (48), but it appears that they have been thus employed for some years and that they have been added to or have occurred as contaminants of other products used as insecticides. In addition, they have been used for some time in lubricants (greases, cutting oils, and crankcase oils)[1]—for what purpose is not made clear, and they have appeared in certain wood preservatives.

A number of remarkable features of the observations thus far reported on "X disease" deserve comment. The active agent has been found in wheat (59, 77, 87) (but the investigators say nothing about bread), and it is excreted in the milk. Calves fed on this milk develop the disease (nothing is said about babies[2] who drink such milk nor about those who eat the meat from these animals). Cattle placed in a field in Indiana that had harbored others that previously had died of hyperkeratosis (1946 to 1949), developed the disease while cattle in an adjacent field were quite unaffected (114). All the investigators are extremely reticent about obvious and highly pertinent questions: Where did the wheat come from that contained the noxious agent? Was it sprayed or dusted in the field or exposed in storage to an insecticide, and if so, what? Were the cattle who originally developed hyperkeratosis on the farm in Indiana sprayed with insecticide, and if so, with what? Was the pasture likewise treated? The glaring omission of these data is not reassuring.

It is obvious from published material that the chlorinated naphthalenes are not the only chemical agents that can cause the disease. One such compound has tentatively been identified as trichlorobenzene (48). In view of the fact that in early studies on DDT in animals hyperkeratosis was observed (85), it seems very likely that this agent too is involved (9). And among the solvents used for DDT and related substances are mixtures containing methylated naphthalenes. Since methyl groups may often be substituted for chlorine atoms in this variety of compounds, without loss of toxicity (16), these mixtures are at least suspect.

One insecticide solvent was indicated by W. C. Hueper (61) of the National Cancer Institute to have been found by other workers to be carcinogenic. One can only wonder why details of these findings have not been made available to the medical profession.

Since the last war there have been a number of curious changes in the incidence of certain ailments and the development of new syndromes never before observed. A most significant feature of this situation is that both man and all his domestic animals have simultaneously been affected.

In man, the incidence of poliomyelitis has risen sharply; there has been a striking increase in cardiovascular diseases, in cancer, in atypical pneumonias, and especially interstitial pneumonitis in babies and children (58), in retrolental

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[1] The use of chlorinated naphthalenes in crankcase oils and other lubricants poses other public health problems: inhalation of these substances from motor exhaust on streets and highways and dermal absorption on the part of garage, service station, and industrial workers.

[2] We have been accustomed for some time to a steadily declining infant mortality. But the overall infant death rate increased in Metropolitan New York City in 1952 by 3 percent. For economically less-favored groups the rise was 8 percent. (Editorial: The City's Health in 1952. N. Y. Times, January 14, 1953.)

fibroplasia among premature infants, in conditions involving excessive fatigability and muscular weakness, in hepatitis, and in obscure gastrointestinal and neuropsychiatric disorders often attributed to a new "virus" (or "virus X").

In animals, cattle have developed hyperkeratosis (or "X disease"), and the incidence of hoof and mouth disease has risen; hogs have vesicular exanthemata; sheep have "blue tongue," "scrapie" and "overeating disease"; chickens have Newcastle disease and other ailments; dogs have developed the so-called "hard pad" disease and the highly fatal "hepatitis X," and so on (43). With the obvious exception of hoof and mouth disease, not one of these conditions is mentioned in the comprehensive U. S. Department of Agriculture Handbook, "Keeping Livestock Healthy," published in 1942. This coincidence alone should have been sufficient to rouse a suspicion that something new that is common both to man and his domestic animals, has been operating in their environment during the period these changes have occurred. This new factor is not far to seek.

When in 1945 DDT was released for use by the general public in the United States and other countries, an impressive background of toxicologic investigations had already shown beyond doubt that this compound was dangerous for all animal life from insects to mammals. In rats, mice, rabbits, guinea pigs, cats, dogs, chicks, goats, sheep, cattle, horses, and monkeys, DDT produces functional disturbances and degenerative changes in the skin, liver, gall bladder, lungs, kidney, spleen, thyroid, adrenals, ovaries, testicles, heart muscle, blood vessels, voluntary muscles, the brain and spinal cord and peripheral nerves, gastrointestinal tract, and blood. The compound is equally dangerous to birds, fish, crustaceans, lizards, frogs, toads, and snakes.[2] Many of the beneficial predator insects like dragonflies, ladybugs and praying mantes may be even more susceptible to DDT than crop eating and other nuisance insects it is desired to kill. It was even known by 1945 that DDT is stored in the body fat of mammals and appears in the milk (106, 118). With this fore-knowledge the series of catastrophic events that followed the most intensive campaign of mass poisoning in known human history, should not have surprised the experts. Yet, far from admitting a causal relationship so obvious that in any other field of biology it would be instantly accepted, virtually the entire apparatus of communication, lay and scientific alike, has been devoted to denying, concealing, suppressing, distorting and attempts to convert into its opposite, the overwhelming evidence. Libel, slander and economic boycott have not been overlooked in this campaign (21). And a new principle of toxicology has, it seems, become firmly entrenched in the literature; no matter how lethal a poison may be for all other forms of animal life, if it doesn't kill human beings instantly it is safe. When nevertheless it unmistakably does kill a human, this was the victim's own fault—either he was "allergic" to it (the uncompensable sin!) or he didn't use it properly.

It is possible to consider in this article only a very small fraction of the total evidence as it has already filled many volumes and will undoubtedly fill many more.

It is not generally realized how vast are the quantities of the new poisons spread over the countryside in agriculture, used as sprays and aerosol fogs in mosquito-control operations and applied in homes and gardens, in hospitals and other institutions, in food processing plants and retail establishments. In agriculture alone 232 million pounds were used in the United States in 1951 and 252 million pounds in 1952 (109), additional millions of pounds were of course used for the other applications. Herbicides of the chlorinated cyclic hydrocarbon group (e. g., 2-, 4 D, 2-, 4-, 5 T) provide a further source of exposure. (In 1952, sale of pesticides in the United States amounted to 400 million dollars.)

Early in 1949, as a result of studies during the previous year, the author (9–11) published reports implicating DDT preparations in the syndrome widely attributed to a "virus-X" in man, in "X-disease" in cattle and in often fatal syndromes in dogs and cats. The relationship was promptly denied by government officials (12), who provided no evidence to contest the author's ob-

[2] H. R. Mills (Death in the Florida Marshes, Audubon Magazine, Sept.–Oct. 1952) has reported incredible devastation to wildlife in the sanctuary of the National Audubon Society in Tampa Bay, Fla., following aerial spraying with DDT for the control of mosquitoes. With each successive spraying the destruction of wildlife increased several-fold until the beaches were literally covered with dead fish and crabs. The concentration of DDT in the tissues of crabs analyzed after spraying in 1950 averaged 2.18 p. p. m. The next year after more sprayings the concentration of DDT in the crabs was 46 p. p. m. and the destruction of wildlife was proportionately faster and more extensive. Yet all this devastation was for naught, for, reports Mills, "None of the sprayings had any effect in mitigating the mosquito situation. Instead the mosquitoes increased until now they are more numerous than they were before the advent of DDT."

servations but relied solely on the prestige of government authority and sheer numbers of experts to bolster their position.

We had shown that exposure to DDT whether by inhalation, ingestion or absorption from the skin, leads to a bizarre syndrome which resembles other ailments in individual details but which had never been known to occur in its entirety prior to the introduction of the chlorinated cyclic hydrocarbon insecticides. This syndrome occurred repeatedly in hundreds of instances studied by the author following known exposure to DDT and related compounds and over and over again in the same patients, each time following known exposure. We have described the syndrome as follows (10–12):

"The syndrome consists of a group of or all the following: Acute gastroenteritis occurs, with nausea, vomiting, abdominal pain, and diarrhea usually associated with extreme tenesmus. Coryza, cough and persistent sore throat are common, often followed by a persistent or recurrent feeling of constriction or a "lump" in the throat; occasionally the sensation of constriction extends substernally and to the back and may be associated with severe pain in either arm. In some cases the hyoid bone becomes acutely painful to pressure for a few days. Pain in the joints, generalized muscle weakness and exhausting fatigue are usual; the latter are often so severe in the acute stage as to be described by some patients as "paralysis." Sometimes the initial attack is ushered in by vertigo and syncope. Intractable headache and giddiness are not uncommon. Occasionally herpes zoster appears. Paresthesias of various kinds occur in most of the cases; areas of skin become exquisitely hypersensitive and after a few days this hyperesthesia disappears only to recur elsewhere, or irregular numbness, tingling sensations, pruritus or formication may occur. Erratic fibrillary twitching of voluntary muscles is common.

"After subsidence of the acute attack, irregular spasm of smooth muscle throughout the gastrointestinal tract often persists for weeks or months, associated with increased fatigability, which only gradually regresses. Febrile reactions occur occasionally during the initial stages but are not the rule. Except for a tendency to anemia, and in some cases a relative lymphocytosis, no constant changes are observable in the blood. Many of the patients have an acute bout of apprehension associated with the foregoing symptom complex and rarely is this relieved by reassurance as to the absence of physical findings sufficient to account for the severity of the disturbance.

"Most striking about the syndrome is the persistence of some of the symptoms, the tendency to repeated recurrence of others over a period of many months (some patients fail to show complete recovery even after a year) and the lack of detectable lesions sufficient to account for the severity of the subjective reaction.

"By far the most disturbing of all the manifestations are the subjective reactions and the extreme muscular weakness. In the severe acute poisonings, patient after patient has used identical words, 'I felt like I was going to die.'

"The sensation can perhaps best be described as one of unbearable emotional turbulence. There are at various times excitement, hyperirritability, anxiety, confusion, inability to concentrate, inattentiveness, forgetfulness, and depression. Perhaps the one common phenomenon is extreme apprehensiveness. These episodes can easily be confused with anxiety attacks. The patients complain that they cannot keep their arms and legs still; they seem to 'want to jump," and these phenomena may be accompanied by fine fibrillary twitchings. Disturbances of equilibrium may occur. Intractable headache and insomnia are frequent. Disturbances of the autonomic nervous system are likewise common: there may be attacks of tachycardia associated with dermal ischemia, sweating of the palms and a sense of impending syncope, followed by bradycardia flushing of the skin, relaxation and cessation of palmar perspiration. (Whether or not disturbances of adrenal medullary function are associated with this phenomenon is a subject requiring further investigation.)

"A characteristic of diagonostic importance, is the recurrence of the subjective reactions in 'waves,' as numerous patients have described it. Some have actually been able to clock the reaction with considerable precision from day to day. The reactions appear most likely to occur during periods of low blood sugar. Additionally, consumption of alcoholic beverages or acute emotional stress may provoke a severe exacerbation.

"Often patients with this disorder complain of a 'hollow feeling' in the epigastrium which bears no constant chronologic relation to the ingestion of food, and in fact may occur immediately after a full meal. Attempts to eat further may provoke sharp repugnance for food and occasionally may lead to an attack

of hiccups, or nausea. In other patients, actual overeating indistinguishable from the compulsive types seen in certain psychogenic disturbances may result.[4]

"Hardly a single sensory nerve appears to be immune to involvement in this disorder: Paresthesias of every known variety, including disorders of vision, smell, taste, and hearing, may occur. Pain of varying intensity and duration may involve any area of the skin, may localize in a joint or even a tooth. Severe peripheral neuritis involving intense, protracted pain in one or more of the extremities is frequent. Pain in the inguinal region, usually bilateral, is also a frequent complaint; occasionally this may be referred to the genitalia. Virtually all these patients have striking diminution of vibratory sensation in the extremities. (This has repeatedly been observed in patients in whom readings had been taken on several occasions with the Collens vibrometer, prior to known exposure to DDT). As already indicated, recurrent extreme fatigability is common. In acute exacerbations, mild clonic convulsions involving mainly the legs, have been observed. Several young children exposed to DDT developed a limp lasting from 2 or 3 days to a week or more.

"Patients with the syndrome rarely show objective changes on physical examination sufficient to account for the severity of the subjective disorder and the actual amount of disability present. In addition to the change in vibratory sensation mentioned, enlargement and tenderness of the liver and palpable spasticity of the colon are the only findings which occur with any degree of constancy.

"A characteristic history is that of a person (and in a number of cases, an entire family simultaneously involved) who, previously well and able to make a satisfactory emotional adjustment to his enviornment, suddenly is affected with the syndrome described and remains partially disabled for many months. In innumerable such cases it was possible to trace the onset of the illness to known exposure to DDT, usually from its use in the home."

Other investigators have also identified part or all of this syndrome with DDT poisoning. Wigglesworth (116), Case (28), Mobbs (82, 83), Pottenger and Krohn (91), Toomey (107), Arena (2), Stone and Gladstone (105), Knight (66, 67), Martin (80), Filkin (51), and numerous other observers have reported the occurrence of these cases following exposure to DDT and related pesticides. Pottenger and Krohn (91) have demonstrated the presence of DDT in the body fat of a large number of such patients, who showed in addition to the neuropsychiatric symptoms, hepatitis with low grade icterus and rise in blood cholesterol.

That this syndrome continues to be ascribed to a virus infection is indicated in a recent article by Dr. F. L. Mickle (Connecticut Needs a New Virus Laboratory) (81):

"* * * virus diseases which appear to be increasing are coming to the foreground. They are of much greater importance in the State than formerly. For instance, almost every person you meet on the street or in the homes of your friends speaks at one time or another of having had the 'virus that's going around' * * * these viruses cause distressing and incapacitating upper respiratory symptoms often accompanied by diarrhea and vomiting."[5]

Simultaneously with the occurrence of this disorder a number of related changes occurred in the incidence of known diseases. The most striking of these is poliomyelitis. In the United States the incidence of polio had been increasing prior to 1945 at a fairly constant rate, but its epidemiologic characteristics remained unchanged. Beginning in 1946 the rate of increase more than doubled (84). Since then remarkable changes in the character of the disease have been noted. Contrary to all past experience, the disease has remained epidemic year after year. It has largely lost its seasonal character, although still most prevalent in the summer. More adults acquire the disorder than ever before. More cases of bulbar involvement are seen.

These changes have not been confined to the United States: For instance (54), "Until 1945, poliomyelitis was uncommon in Mexico. Since then, its incidence has been increasing; in 1950, nearly a thousand cases were observed in Mexico City * * * and the figures for the first half of 1951 seem to be higher."

In the Philippines and elsewhere in the Far East American troops, who used vast quantities of DDT as insecticides, had a high incidence of poliomyelitis, while it was extremely low in the surrounding native population (96).

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[4] Note that, as already mentioned, there is now also an "overeating disease" of sheep.

[5] A factor that has led to considerable confusion in diagnosis is that DDT, for instance, produces mononuclear cell infiltration and splenic hyperplasia similar to that seen in genuine virus infections. This has been observed both in animals and in man.

In Israel (50), where the widespread use of DDT, especially in public health and agricultural applications, was delayed, "Prior to 1950 only one or two cases of poliomyelitis appeared monthly * * * During 1950, about sixteen hundred cases were listed, which is more than one case per thousand population. The epidemic was heralded by a rising number of isolated cases in the summer of 1950." It is recognized that a disturbed immunologic equilibrium as a result of mass immigration cannot explain this epidemic in Israel, any more than it can be a factor in Mexico or the United States. Curiously, too, in Israel (as in the case of the native populations in the Far East) the less technologically advanced Arabs have a much lower incidence of the disease.

McCormick (78), Scobey (100–101), and Goddard (57), in detailed studies, have all pointed out that factors other than infective agents are certainly involved in the etiology of polio, varying from nutritional defects to a variety of poisons which affect the nervous system.

Particularly relevant to recent aspects of this problem are neglected studies by Lillie and his collaborators (74, 75) of the National Institutes of Health, published in 1944 and 1947, respectively, which showed that DDT may produce degeneration of the anterior horn cells of the spinal cord in animals. These changes do not occur regularly in exposed animals any more than they do in human beings, but they do appear often enough to be significant. When the population iis exposed to a chemical agent known to produce in animals lesions in the spinal cord resembling those in human polio, and thereafter the latter disease increases sharply in incidence and maintains its epidemic character year after year, is it unreasonable to suspect an etiologic relationship?

The mortality from cardiovascular diseases has also risen alarmingly since 1945. So serious is this problem that T. G. Klumpp (65) recently commented "* * * most businessmen * * * work with mental brakes set against their work and in mortal terror of a heart atack. They are afraid to live for fear of dying."

Among its numerous effects, DDT is a liver poison, an observation made by innumerable investigators. Associated with the induced hepatitis, there is hypercholesterolemia and hyperlipemia with an enhanced tendency to coronary atherosclerosis (13). Myocardial lesions have been reported in animals exposed to DDT as well as lesions of the blood vessels resembling periarteritis nodosa. In addition to changes in cellular enzyme systems leading to increased oxygen uptake (62, 93) similar to that produced by dinitrophenol, DDT also interferes with lactic acid metabolism and inhibits heart cytochrome oxidase (63). Finally, according to Lehman (71) of the Federal Food and Drug Administration:

"DDT produces an excess excitability of the cardiac muscle so that any coincident sympathetic stimulation * * * can result in ventricular fibrillation."

In a recent publication purporting to disprove my contention that the insecticides are implicated in certain ailments, R. E. L. Fowler (55) of the U. S. P. H. S. Communicable Disease Center reported some statistics from the cotton belt of the Mississippi Delta, before and after the introduction of DDT. Mortality from "heart diseases" in this area rose from 141.3 before the use of DDT to 189.4 per 100,000 after is introduction (a rise of 34 percent!). But says Fowler, dismissing the subject, "* * * this was similar to the rise recorded for the State as a whole." Actually the figures he gives for the entire State are 170 per 100,000 before and 213.7 after DDT was used, an increase of 25.7 percent! Surely this investigator could not have meant to imply that the population of Mississippi outside the Delta Area, was not significantly exposed to DDT. If the inhabitants of the Delta got an extra large dose, there is indeed an extra increase in cardiac mortality of 8.3 percent to answer for it. The true difference is obviously even greater, for the comparison was not made between the Delta and the rest of the state but between the Delta and the whole state. (It is ironic that the statement by Klumpp already quoted appeared in the same issue of the same journal.)

With the known primary and secondary effects of DDT on the cardiovascular system, and the amazing increase in mortality from heart disease following widespread use of this agent, it is unreasonable to deduce an etiologic relationship?[6]

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[6] W. J. McCormick in an excellent study (Clin. Med., 59: 305, July, 1952) has recently implicated smoking of tobacco in the increasing incidence of coronary occlusion. Smoking has also been implicated in the rising incidence of cancer of the lung. Space does not permit an adequate discussion of the problem, but certain features of it appear to me to have been neglected. Despite the fact that prior to 1930 there were plenty of long-term intemperate smokers, cancer of the lung, for instance, was nevertheless a rare disease. Why was bronchiogenic carcinoma seen so rarely in chain smokers in the 1920's? Yet the evidence

Fowler raises other issues but chooses not to discuss most of them—he gives no figures for the change in incidence of polio, nor in that of hepatitis. He does admit that absenteeism from school rose approximately 9 percent during the period DDT was used, but he dismisses this as being possibly due to sociologic factors. He also indicates an increase in "communicable diseases" in the Delta area over that in the State as a whole but this he dismisses as being due to a racial difference (obviously this racial difference existed prior to the use of DDT).

The rise in the incidence of hepatitis in the general population since 1945 is also without parallel and involves all age groups, including young infants. Information as to total morbidity from this disorder is obviously unavailable but even a cursory survey of recent medical literature shows that hepatitis is now one of the major medical problems. Most of the reported cases are considered "infectious," although the virtual impossibility of diagnosing the "infectious" nature of a given case or of demonstrating the transmissibility of the disease must be obvious even to the casual observer, since human infectious hepatitis can be transmitted only to man. The most curious aspect of the rise in hepatitis is that simultaneously this has occurred for instance in cattle, in dogs and in other farm animals. In cattle "X-disease" (or hyperkeratosis) in which the chlorinated cyclic hydrocarbons are now etiologically implicated, involvement of the liver with a profound disturbance in vitamin A metabolism and storage is invariable. In dogs the highly fatal "infectious" hepatitis and hepatitis "X" have appeared.

It would be a most remarkable coincidence if several entirely different hepatic infective agents, each specific to a different animal species, arose simultaneously. Human infectious hepatitis is not transmissible to dogs or cattle or vice versa. How then account for this situation?

Without exception, every one of the chlorinated cyclic hydrocarbon insecticides is a liver poison. This is true of the entire series from the solvent monochlorobenzene and the mothicide paradichlorobenzene (4) to DDT and the chlorinated naphthalenes aldrin and dieldrin.[7] The chlorinated naphthalenes were shown to produce hepatitis (often with acute yellow atrophy) (45, 53) as long ago as 1936, and were responsible for much morbidity and many deaths among workers in industry (where they have been used in insulation for electric

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that smoking is today implicated in coronary thrombosis and in pulmonary cancer appears convincing. It is not generally realized that in growing tobacco, it is sprayed in the field with several of the DDT series of compounds, including the dangerous adrenal poison TDE (or "DDD"), chlordane, toxaphene, and lindane, and the organic phosphorus compounds as well. The residues of all these substances vaporize in the smoke.

Of course, still other factors may have operated even prior to the use of these compounds, such as changes in the composition of the tobacco plant from depletion of the soil, or use of certain fertilizers, or addition of certain substances in the final manufacturing process. Also, inhalation of other atmospheric contaminants which have increased in the last generation (e. g., lead, chlorinated naphthalenes, and other products of combustion from motor exhaust), and the increased exposure to radiation (D. W. Moeller et al.: Pub. Health Rep. 68: 57, Jan., 1953) may well make the extra trauma of smoking the straw that breaks the camel's back. It is worth noting that *a sharp rise in the rate of increase in carcinoma of the lung occurred about 1947*, and this has persisted. It is interesting to compare charts showing the changes in the rates of increase of such diverse entities as poliomyelitis, retrolental fibroplasia, cardiovascular diseases, and pulmonary carcinoma.

W. F. Enos et al. (J.A.M.A. 152: 1090, July 18, 1953) have reported the startling observation that among 300 U. S. soldiers killed in action in Korea, average age approximately 22.1 years (range 18 to 48), 77.3 percent had "gross evidence of coronary arteriosclerosis" ranging "from 'fibrous' thickening to large atheromatous plaques causing complete occlusion of one or more of the major vessels." Last year Army Surgeon General Armstrong (J.A.M.A. 148: ad. p. 17, March 8, 1952) reported that among conditions of major concern to the service was acute hepatitis and that the incidence of neuropsychiatric disturbances was 54.1 per 1,000 troops a year. Can these remarkable coincidences have anything to do with the fact that DDT and lindane are used in Korea intensively?

As for retrolental fibroplasia among premature infants, in New Jersey, for instance, ". . . new cases of preschool blindness had been coming in at a rate of around 100 a year for the last three years; before that for two years the rate was less than fifty a year; and earlier, less than ten a year . . . 75 percent of the new cases were retrolental fibroplasia." (G. Meyer: Proc. Am. Assoc. of Workers for the Blind, reported in the N. Y. Times, July 15, 1953.) It is noteworthy that cataract was among the unfortunate consequences of the use of dinitrophenol as a thyroid substitute for weight reduction, in the 1930's. Since, as already mentioned, DDT has been shown to produce an increase in oxygen uptake similar to dinitrophenol (93), and paradichlorobenzene has been reported also to produce cataract (4), is this phenomenon pure coincidence?

[7] Aldrin was recommended by the U. S. Department of Agriculture in 1953, for use on corn, wheat, oats, barley, rye, potatoes, peanuts, cotton, and on pastures. Dieldrin has likewise been recommended for corn, wheat, and other small grains, as well as for cotton and alfalfa. In the State of California dieldrin has been registered for use on alfalfa, apple, bean, cabbage, citrus fruit, corn, cotton, garlic, grape, melon, onion, peach, pear, and for treatment of wheat seed and outdoor use against house flies, mosquitoes, ants, chiggers, ticks, and fleas.

cable) long before these compounds were used in agriculture. Exposure to this whole group of compounds is now universal in the United States, and it appears that few persons escape storage of these toxic agents in the body fat.

The body fat has been termed a "biological magnifier" of DDT by investigators of the Federal Food and Drug Administration (68, 69). When amounts as low as 0.1 part per million dry weight (the average human diet contains very much more) are included in the diet, the body fat may reach concentrations up to 150 times as much. This has been confirmed by many workers on many species of animals. The significance and potential consequences of such storage in body fat have been reviewed in an excellent editorial in the Journal of the A. M. A., "Insecticide Storage in Adipose Tissue" (47). As pointed out in this editorial, body fat is not simply an inactive storage depot but is subject to continuous turnover and takes part in many metabolic processes. Further, "The influence of the stored insecticide may not be limited to adipose tissue. In fact, dichlorodiphenyltrichloroethane [DDT] is found in all other tissues in proportion to their fat content. Fats and lipids are constituents of cell membranes and are concerned with the phenomena of cell permeability and cell organization in every tissue of the body . . . Consequently storage of a toxicant in the fat of parenchymal cells is essentially storage in the cell itself, where such important enzymatic processes as oxidation, phosphorylation and cholestrol synthesis takes place . . ."

What is the situation with regard to fat storage of insecticides in the human being? The difficulties involved in studying this problem are formidable. Quantitative chemical methods do not exist for all the compounds and the methods that are available, though accurate, are difficult, time consuming and laborious. Certain of the compounds are converted in the body to other substances before being stored. (Heptachlor, for instance, a constituent of chlordane which is also used separately, has been reported by F. D. A. investigators (40, 92) to be stored as heptachlor epoxide, considerably more toxic than the original heptachlor.) Obtaining sufficiently large fat specimens requires minor surgery, and only in lactating women can fat storage be estimated without surgery, since these compounds appear in the fat portions of the milk. In addition, numerous impediments of a nontechnical nature have been placed in the path of those who would pursue such studies on a sufficient scale. Nevertheless, the data that do exist, although limited thus far to studies on DDT, are the more alarming because they are derived from subjects in many widely separated parts of the country.

DDT has been demonstrated to occur in human body fat in all but a few of the cases examined (e. g., in sixty out of seventy-five in one series (69); in twenty-three out of twenty-five in another) (80) in concentrations from 0.1 to 34 p. p. m. (the highest result obtained—34 p. p. m.—came from an infant!). It has likewise been demonstrated in mother's milk (in seven out of seven cases in one series, in thirty out of thirty-two in another (11, 12, 69) in concentrations of from 0.01 to 116 p. p. m. In a study reported more recently from the U. S. Public Health Service (98), biopsy specimens were obtained from 113 volunteers from widely scattered sections of the United States. In 111 of these the range of DDT content was from 0 to 68 p. p. m., with an average concentration of 6.41 p. p. m. (The significance of this figure may perhaps be appreciated by the fact that as little as 3 p. p. m. has been found to inhibit heart cytochrome oxidase.) Two DDT handlers had 91 and 291 p. p. m. respectively! Even after prolonged rest from their occupations (in the first case, two years) the DDT levels in the fat were still 30 and 240 p. p. m., illustrating the tenacity with which this material is stored. A further study by workers at the United States Public Health Service (88) showed, in eight specimens of human fat, from 1.9 to 14 p. p. m. DDT and from 1.7 to 44.7 p. p. m. of a compound tentatively identified as DDE (an ethylene derivative of DDT). These investigators point out:

"Presumably the DDT occurring in the fat of individuals of the general population arises mainly through contamination of a number of common foodstuffs. It is not known whether the DDE evidently present is also a contaminant as a result of partial degradation of the DDT residues on plant products prior to ingestion, or whether degradation occurs during digestion or after deposition in the fat."

This study has unfortunately been used as propaganda for the alleged safety of DDT on the assumption that it shows that DDT is detoxified in the body, here is virtually harmless (104). The observations, already cited, that the related compound heptachlor is converted in the body to a more toxic substance points up the inadvisability of drawing such far-reaching conclusions from inadequate data. Quantitative studies on the occurrence in human body fat of other

insecticides to which there is universal dietary and environmental exposure, such as technical benzene hexachloride and its individual isomers, toxaphene, methoxychlor, chlordane, heptachlor, aldrin and dieldrin are as yet not available, although qualitative evidence of human storage of benzene hexachloride has been obtained and evidence of fat storage of the other compounds is available from animal investigations.[8]

Contamination of foodstuffs (e. g., 3, 5, 6–8, 24–27, 31, 38, 42, 64, 79, 95, 103, 110, 117) provides probably the main source of the chlorinated hydrocarbons found in human body fat, although this is by no means the only source. These compounds are used as sprays, aerosols and fogs in inhabited areas in such manner that the finely dispersed particles are readily absorbable through the lungs and through the skin, they are vaporized by means of heating devices in homes, restaurants, food stores and other buildings; they are incorporated into paints, wallpaper and floor wax; they are used to mothproof virtually every variety of textile, including many that no moth larva could eat; they are sprayed and painted on every conceivable surface in homes and institutions. As the Canadian Department of National Health and Welfare (29) has pointed out, "Dangerous residues of these compounds may persist on treated surfaces for very long periods." Obviously, once used, finely dispersed vapors and dusts of so stable a character readily become resuspended in air, can be inhaled directly over long periods and can contaminate foods and food utensils Contact with treated surfaces can lead to significant absorption through the skin. The amounts required to produce severe acute reactions in human beings are often extremely small. In one case investigated by the author, the syndrome described in detail earlier in this article was produced by the ingestion of only four micrograms of DDT in food.

Unfortunately, today contamination of food is virtually universal. Even if the farmer does not use the new insecticides (and few do not), it is a rare food that escapes contact with insecticides in storage, shipment, processing plants, warehouses and stores.

Dendy (44), for instance, bought milk and meat on the open market in Texas, from July through December. Every specimen of these staples was found to contain DDT, from less than 0.5 p. p. m. to 13.8 p. p. m. in milk and from 3.1 p. p. m. in lean meat to 68.5 p. p. m. in fat meat. Corn and sunflowers were sprayed in the field with DDT, toxaphene, chlordane, BHC, methoxychlor, or aldrin using less than standard agricultural practice. In every case the insecticide penetrated to the interior of the kernels or seeds and was present in concentrations of from 4 to 7.4 p. p. m.

Numerous other studies both on market samples of foods bought at retail, and on specimens obtained by duplicating standard agricultural practice, show that it is a rare food that escapes contamination with amounts often greatly in excess of that known to produce liver damage in animals.

It has been claimed that without the use of newer insecticides, there would not be enough food to go around and that even though these substances are toxic, their use involves a "calculated risk." But as a number of agricultural and public health workers have now recognized, even disregarding toxic effects on the human population, the use of the newer insecticides is not only not helpful, but in the long run actually detrimental, both for the growth of crops and the prevention of disease carried by insect vectors. Everywhere that DDT has been used for any length of time, strains of insects, both those that attack crops, as well as flies, mosquitoes and lice, have become resistant not only to DDT but to related compounds as well. This has been shown to be caused by the long persistence of the toxicity of these compounds. The phenomenon never occurred so long as only short-acting insecticides like pyrethrum and rotenone were employed (30).

A. D. Pickett (89, 90) in Nova Scotia, and Paul DeBach (41), in California have both pointed out that the use of preparations like DDT in orchards, for instance, by creating insecticide resistance and by destroying natural predators of the noxious insects, actually perpetuates the emergency for which these compounds were used in the first place.

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[8] It has been claimed that certain compounds, like methoxychlor (an analog of DDT containing methoxy groups in place of two chlorine atoms), are less toxic and less likely to be stored in body fat than DDT. But if the liver is first damaged by another toxic agent, methoxychlor produces symptoms similar to those of DDT and stores in the body fat from 10 to 100 times as much as in control animals. (Laug, E. P., and Kunze, F. M.: Fed. Proc., 10: 318, March, 1951.) (Cf. also, Haag, H. B., et al.: Arch. int. de Pharmacodyn. et de Therap., 83: 491, Sept., 1950.)

As many workers have now shown, by maintaining proper fertility of the soil, it is possible without the use of insecticides to raise crops showing little or no damage from insects (1, 20, 115). It must be remembered that agriculture flourished for thousands of years without the use of insecticides and that even today the average yields per acre for many crops grown without these chemicals in other countries greatly exceed the average yields in the United States.

Owing to the insoluble problems created by insecticide resistance in public health applications, A. D. Hess (60) of the U. S. Public Health Service Communicable Disease Center, has advocated a return to biologic methods and the older technics of sanitation for the control of insect vectors. The futility of the chemical approach to the insect problem is perhaps no better illustrated than by the fact that after seven or eight years of the most intensive imaginable poison campaign, virtually the entire "bread basket" area of the United States was blanketed in 1953 with army worms, that destroyed vast areas of food crops, over many states. It was admitted by the U. S. Department of Agriculture that further chemical attack on these insects was fruitless, although this same Department then released the extremely toxic dieldrin for use against them! (112).

The extremely stable nature of the DDT group of insecticides poses another problem. In amounts normally used for growing of crops, severe poisoning of the soil (39, 76, 99, 102, 111, 113) has persisted for the entire duration of reported observations (seven years) and as no means are available to destroy these compounds, millions of acres of farmland may ultimately have to be withdrawn from cultivation, since these substances not only inhibit the growth of many plants but may be absorbed into the food portions in dangerous concentrations.

Two widespread practices deserve special comment; the use of chlordane in homes (73) institutions and food establishments (94) and the similar use of electric vaporizers for DDT or lindane (the gamma isomer of benzene hexachloride) or a mixture of the two.

Chlordane is probably the most commonly used for roach control in buildings of all the available insecticides. It is routinely used even in hospitals. Chlordane, a technical mixture with a musty odor, consisting mainly of chlorinated indanes (heptachlor, already mentioned, is one of the constituents), is an extremely dangerous nerve and liver poison. Although very persistent when applied, it is nevertheless slowly volatilized. Frings and O'Tousa (56) report in studies on animals:

"The first system affected is the nervous system, and nervous symptoms predominate in acute toxicity. In chronic intoxication, however, the liver seems to be most affected * * *. Because of the widespread use of chlordane in structural pest control, the rather striking toxicity of the vapor is significant. * * *"

Lehman (72) recently reported experience with chlordane at the Federal Food and Drug Administration:

"In my opinion, chlordane is one of the most toxic of insecticides we have to deal with * * * it penetrates the skin very readily. Therefore, anyone handling it could be poisoned. Or if it is used as a household spray, the potential hazard of living in these houses is quite great because of the ability of chlordane to penetrate the skin and because of the volatility of the insecticide and the possibility of poisoning by inhalation. More to the point is that it is very toxic to the liver and kidneys * * * I would put chlordane four to five times more poisonous than DDT * * * I would hesitate to eat food that had any chlordane on it whatsoever * * * It is our opinion that chlordane has no place in the food industry where even the remotest opportunity for contamination exists.[9] We feel that its use as a household spray[10] or in floor waxes is out of place * * * we have not been able to maintain pigeons in a small room that was treated with chlordane, even after a thorough scrubbing with strong alkali and subsequent airing for several weeks."

Exposure to chlordane leads to rapid, high and tenacious storage in body fat. Heptachlor, one of its components, as already mentioned, is converted in the body to a more toxic substance, heptachlor epoxide, and stored as such.

The use of chlordane against termites in the foundation of a house, in a case brought to my attention, resulted in such a high vapor concentration that the

[9] As an example of the use of these materials in the food industry, Holmes and Salathe (Proc. Am. Chem. Soc. 115th meeting, 1949, p. 18A) state: "Experience has shown within the baking industry that DDT and chlordane can be applied safely in 5 & 2 percent solutions, respectively. * * * the application must be so general that there are few if any areas that insects might travel over, which have not been treated."

[10] In 1952 a popular journal of immense circulation advised its readers to apply chlordane to floors, baseboards, sinks, under refrigerators and other appliances, to mattresses, wallpaper, rugs, clothes closets, and clothing.

house remained thereafter uninhabitable to the owner. All efforts to remove the offending agent failed.

In a hospital in which technical chlordane is applied routinely in the kitchen and food storeroom and less regularly elsewhere in the institution, for roach control, an epidemic of hepatitis has persisted among the resident nursing staff for three years. This disorder was considered "infectious," [11] yet despite adequate epidemiologic precautions the cases continue to appear. The chlordane is still in use.

During the past two years or so an incredible profusion of devices for vaporizing insecticides in room air have appeared on the market. These vary from thermostatically controlled heating devices, to special electric light bulbs with a compartment for inserting a pellet or crystals of DDT or lindane, to metallic gadgets and even impregnated adhesive tape for application to ordinary light bulbs. The hazards of these devices have been pointed out repeatedly, yet newspapers and magazines promote them to the public as if they were the safest of all the new miracles. A newspaper of internationl repute even carried an article in which it was pointed out, referring to such a device, "* * * it is easy in using it to increase the rate of vaporization to the point where it is hazardous to humans * * * the experts advise that products containing lindane be used with the utmost precaution. One goes so far as to say that: 'Although they're advertised as safe, they are really not'." Yet the same issue and succeeding Sunday issues carried numerous advertisements for them.

To quote the A. M. A. Council on Pharmacy and Chemistry (35),

"* * * it is not reasonable to expect that human beings can avoid injury if they are exposed * * * year after year to a toxic agent in atmospheric concentrations that kill insects in a few hours * * * the resultant injury may be cumulative or delayed, or simulate a chronic disease of other origin, thereby making identification and statistical comparison difficult or impossible."

It was found that, in an eight hour period an average person might inhale from 1.3 to 13 mg. of DDT or from 0.9 to 2 mg. of lindane, as ordinarily vaporized from one of these devices. In addition, the vaporized material ultimately recrystallizes on walls, ceilings, furniture, clothing, on food utensils and food.

The California State Board of Health (23) passed a resolution last year, "* * * that electrical vaporizers dispensing lindane or other chlorinated hydrocarbons be not used in closed spaces where people sleep, work or where unpackaged [12] food is exposed, and that extreme caution be exercised in the indoor dispersion of such chemicals by any means * * *"

The Federal Interdepartmental Committee on Pest Control has also advised that insecticide vaporizers not be used for insect control in living quarters.

TREATMENT

Treatment of poisoning with the chlorinated cyclic hydrocarbons of the DDT group requires *both* elimination of further exposure from environment and food, and treatment of the associated nutritional defect which accompanies the hepatitis. Sprayed clothing, textiles and bedding must be cleaned with lipoid solvents, the particles of DDT must be removed from the room dust in places that have been treated with DDT aerosol, preferably by lacquering, painting or waxing (with wax that is insecticide-free, of course!) all affected surfaces Wallpaper impregnated with DDT has caused severe symptoms in a number of cases investigated. Persons sensitive to DDT and related compounds must avoid as much as possible visiting places known to have been treated with these

[11] Aside from the question of the nature of "viruses," which is too intricate to consider here (cf. references 78 and 101, for instance), it should be pointed out that not only may a toxic agent which damages a particular organ simulate infectious disease, but the damaged organ is more susceptible to transmissible agents, if exposure occurs.

[12] It is unfortunate that the California Board did not also include packaged food. The U. S. Department of Agriculture has reported the following experience: "An unexpected finding was the contamination of raisins stored for one month in boxes treated with DDT on the outside only, which indicated that DDT could be spread by volatilizing. This idea was substantiated by analyzing grain samples that had been in storage three to four months in elevators that had been treated with DDT when empty." (A procedure incidentally which the Department of Agriculture still recommends!) (Toxicity of Insecticides, Fungicides, and Herbicides, p. 45.) A similar experience was reported from Britain. When wheat flour, soya flour, ground nuts, or coca beans were stored for from four to thirteen months in sacks treated with 1 percent or 5 percent DDT (the amounts found necessary to prevent insect penetration) all these products absorbed DDT in concentrations of from 5 to 645 p. p. m. (G. V. B. Herford: J. Roy. San. Inst., 70: 666–673: Nov. 1950.)

agents. Foods or portions of foods in which DDT and the like are now known to occur must be avoided. This entails avoidance of butterfat in all its forms, careful peeling of all fruits and vegetables and avoidance of those that cannot be peeled, substitution of fish and seafood and skim milk products as much as possible for the usual source of protein, and the *medicinal grade* of peanut oil (which we have found to be free of the DDT group of compounds) for the usual sources of fat.

Repeatedly, I have patients who lost weight continuously to the extent of 20 or 30 pounds on a full diet containing large amounts of beef and butterfat, who promptly regained all or most of their weight on a diet lower in calories but restricted as indicated. Unless further exposure to the newer insecticides is avoided as stringently as possible, both from direct contact or inhalation and from food, no remedies I have tried give any except slight symptomatic relief. (Pentobarbital in small—30 mg.—doses often temporarily relieves the symptoms related to the nervous system.)

As Pottenger and Krohn, and we have found, administration of intensive, complete and persistent nutritional therapy is essential in these cases to repair the liver damage. A source of the available water-soluble and lipo-soluble vitamins, suitable oral liver products and lipotropic factors, together with a high protein diet, are all necessary to adequate tissue repair. The requisites for this type of therapy have been discussed in detail elsewhere (15).

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STATEMENT OF DR. ROBERT F. MOBBS, ABERDEEN, N. C.

Dr. MOBBS. I might mention a couple of points and then discuss it with you. First I have a definite opinion on the toxicity of sprays that are used on tobacco, and I feel that there is a definite possibility that they are what may have caused the increase in cancer of the lungs.

Senator PURTELL. What has caused you to arrive at that conclusion?

Mr. MOBBS. Because there are basic experiments on chlorinated hydrocarbons to show that.

Senator PURTELL. Are they extended experiments and by whom were they made?

Dr. MOBBS. The basic one was first of chlorinated hydrocarbons to be introduced, namely, DDT. It is about the only one of this group that has been fairly well studied and the study was made by the United States Food and Drug Administration, in which they incorporated into the diet of rats a small amount of DDT daily. They did this in order to try to determine the danger of DDT as we might get it in our daily diet, and the amount that the animals received was about what we might receive or expect to get in our daily diet, or slightly more than that.

The Food and Drug Administration scientists came to the conclusion that DDT was a definite minimal carcinogenic agent.

Then, too, benzene hexachloride is another of the insecticides that sometimes contaminates tobacco. At least I know of instances where it has. It has been proven to be capable of producing an abnormal——

Senator PURTELL. May I explore that a moment? I don't want to dwell too much on it, but you say you know of instances where it has. Has that been in its application or what? Is it a general practice?

Mr. MOBBS. I am from North Carolina where cotton and tobacco are both grown and cotton and tobacco fields are often adjacent. The benzene hexachloride is frequently applied to cotton and it often drifts over on the tobacco. One particular instance occurred where a tobacco field was across the street from an insecticide mixing plant, and there all sorts of insecticides were used and drifted across the street, and evidently got on this tobacco.

Senator PURTELL. That wouldn't be a general practice applying to tobacco, would it? I happen to be from Connecticut and we do grow a lot of tobacco. We don't grow any cotton. I don't know any pesticide producer up there, so would you say that tobacco is not contaminated if the proper spray is used?

Dr. MOBBS. In Connecticut they have been throwing DDT all over the area on gypsy moth control.

Senator PURTELL. That is right. We tried to control the gypsy moth; that is correct.

Dr. MOBBS. If tobacco fields are adjacent to places sprayed by DDT, you get that type of contamination, and we have a lot more tobacco down in North Carolina than you have in Connecticut.

Senator PURTELL. That is right. You make a lot of cigarettes; we make just the wrappers for cigars, mostly, up there.

Dr. MOBBS. Tobacco was checked by agricultural experts who felt they could find no explanation for the defects in the tobacco, other than the chemicals that were contaminating it, and yet that tobacco was sold about 3 days after it was examined by the agricultural experts.

Now since these things are known to be carcinogenic agents, it seems obvious that contamination of tobacco with these things is dangerous and at least warrants study, which it has not received.

Also, there are two other chlorinated hydrocarbons, namely, aldrin and dieldrin, which I was informed by one of the Food and Drug Administration scientists are used experimentally to produce experimental cancer by the British scientists, and in this country are used on some tobacco.

Senator PURTELL. Is that used in preparation of tobacco, the making of the end product, or is it done in the field?

Dr. MOBBS. It is done in the field, yes, and that probably has been pretty entirely ignored.

I might call your attention to the fact that Dr. Graham, professor of surgery at the medical school in St. Louis, who is one of the pioneers in this business of tobacco causing lung cancer, has made the statement that it may be the insecticides or other chemicals that are added to tobacco in the growing and processing that are the carcinogenic agents, rather than something inherent in the tobacco.

If you would like to get back to the basic aspects of the bill——

Senator PURTELL. We would.

Dr. MOBBS. All right. This bill can't mean much unless you change the basic bill under which pesticides are registered for use; namely, the Federal Insecticide, Fungicide and Rodenticide Act.

Now that bill has a very definite joker in it under which the most deadly substances known to man can be registered and used as insecticides and are. Those substances are parathion, which recently killed a child in Connecticut, and which has been or will probably be used in warfare as a chemical agent for the purpose of killing troops.

Senator PURTELL. You say it killed a child in Connecticut?

Dr. MOBBS. Yes.

Senator PURTELL. What were the circumstances of that?

Mr. MOBBS. Well parathion was put on the market in aerisol bombs and the child who was fooling with the bomb got some of it, and was taken to the hospital at Yale and died.

This case was written up in the Connecticut State Medical Journal and, also, the North Carolina Medical Journal, and it was stressed by the chemical warfare people. This is one instance, I think, where humans were used in a way as guinea pigs, because the chemical warfare people, of course, are interested in parathion and other forms of gas substances in warfare, and they wanted to get what information they could about the effect on man, so they sent their chief investigator to investigate this happening in Connecticut.

To ingest parathion is surpassed in toxicity by a substance known as 1080, which I don't believe any living creature ever ingested any of and lived, and yet that is used around food establishments.

Senator PURTELL. What way is it used? It is part of a pesticide or insecticide?

Dr. MOBBS. It has been used as an insecticide, but it is usually used as a rat poison. One instance where it was mistaken for a food was reported to me by Dr. Whitmire, Director of the Whitmire Research Laboratory in St. Louis, and this 1080 was put in a soft drink bottle and left in the refrigerator and drank by an individual who promptly died.

Senator PURTELL. But this particular chemical you are speaking of now, that is not used as a pesticide, but you say it is used simply to get rid of rodents; is that right?

Dr. MOBBS. There is one instance where it was used as an ant poison in Texas until it killed a couple people.

Senator PURTELL. We are concerned right now with the pesticide having to do with food, vegetables and fruits.

Dr. MOBBS. Yes, but I would like to again call your attention to this joker in the basic bill under which pesticides are registered. There was brought out by Mr. Charles Wesley Dunn, a prominent New York attorney, before the Dulaney committee hearing—I will quote his testimony.

Mr. Dunn stated:

> The Secretary of Agriculture has the authority to deny the registration of an insecticide that he deems not in compliance with the act from the standpoint of public welfare. But the act contains a joker, which I mentioned, and it is that the Secretary must nevertheless register a product if the manufacturer of it insists on it. How that provision got into the act, I don't know, but it is there.

That statement in that basic bill can destroy any benefits of the present bill, the bill we are now considering.

Senator PURTELL. Don't we have to finish that statement? Don't you have to say what you say in your statement:

> The Secretary may then cancel its registration, where he deems this necessary to protect the public * * *.

Don't we have to include that?

Dr. MOBBS. I was willing to include it, but you also notice that Mr. Dunn continued and stated:

> but I understand that he has not canceled the registration of any economic poison used as a pesticide in growing natural food.

Senator PURTELL. He probably didn't do it. I don't know the circumstances, but certainly we have no right to convict the Secretary or anybody in his Department on the basis he didn't do it and its was an injurious preparation. He must not have canceled it because it was registered and he felt it did comply with the law.

Dr. MOBBS. Well how about this. United States Food and Drug Administration for 20 years has been trying to get a product, namely, vinium, off the market. This is used on food to kill mice that get on apples and citrus fruit, yet they have been hamstrung because you have jokers in the basic bill that prevent this product that also is a cancer-producing agent from being eliminated.

Senator PURTELL. Now is it true from the evidence you presented this morning there isn't a joker insofar as the authority of the Secretary to cancel its registration? That isn't a joker, is it?

Dr. MOBBS. Well Mr. Dunn, as a prominent food and drug attorney, so stated.

Senator PURTELL. But he did state that the Secretary may then cancel the registration, did he not?

Now whether or not the Secretary is acting according to the way Mr. Dunn thinks he should act is another thing, but the Secretary has the power to cancel registrations, hasn't he?

Dr. MOBBS. Yes, but there has been points where Agriculture people have sort of come in conflict with the Food and Drug Administration, and in order to make the bill you are presently considering really protect the public, I think more authority should be delegated to the Food and Drug Administration to make the basic decision from the public health standpoint.

Senator PURTELL. You make that as a recommendation?

Dr. MOBBS. Yes, and also you will notice I quote from Mr. Rockefeller, or a statement registered in his name at the hearing in the House on this bill we are now considering, and he feels that the fact should be spelled out in the bill that any new pesticide be required to get a tolerance; that it not be left to an interpretation by the people in Agriculture.

Senator PURTELL. He suggested, as your statement shows, that the bill amended to specifically call for obtaining tolerance or exemption for economic poisons registered prior to the effective date of the bill. He would, however, allow a grace period of 1 year in which previously registered pesticides could obtain a tolerance.

Dr. MOBBS. He made two points; that new pesticides be registered and those now registered be reevaluated.

There is another question of interpretation.

Senator PURTELL. That is a matter we are going to give very serious consideration to in the deliberations of this bill here.

Dr. MOBBS. Also on the Food and Drug bill. This bill, I think, violates the basic principles laid down by the Congress when the Food and Drug bill was originally passed.

Senator PURTELL. In what way?

Dr. MOBBS. In that substances that contaminate foods should be certified as necessary for the production of food rather than simply useful. The present bill uses the term "useful," and this violates the basic public policy of the Food and Drug law as you people in Congress passed it originally.

Dr. Crawford, the Food and Drug Administrator, made this point in hearings that were held last July on the original form of this bill. He feels that there were somethings now contaminating foods as we make our advances in food technology that we should only use if needed, and not simply things that are useful. I will illustrate that in the close by saying there are substances more poisonous than lindane, if I may use that as an example. It is often used as a vaporizing device in restaurants, in the home and dairy farms, and yet there have been many serious possibilities of toxicity and deleterious affects shown from lindane.

Now there are substances that the Food and Drug Administration have recommended for use, for instance, around dairy farms that don't have an accumulative affect. If we have something that is safer, I think we should use that, and not certify for use things that are much more harmful.

Also, you have a new one for use in dairy barns where they mix it with one of these organic phosphates that is related to the nerve gas

that probably will be used in warfare, and it is mixed with sugar. I would predict that its use throughout the summer will certainly result in some deaths from it. The children will mistake it for candy.

Senator PURTELL. It is used for what purpose?

Dr. MOBBS. It is dropped around the dairy barns to kill mice. The mice like the sugar, as well as the children, and they eat it and it kills them, but it is sort of dangerous when you have safer products that could be used.

Senator PURTELL. However, Doctor, am I correct in assuming you are not against the bill, but you feel the bill doesn't go far enough?

Dr. MOBBS. That is definitely correct. I feel it may give a false feeling of reassurance to the public; that it should be strengthened, if it is to accomplish its purpose.

Senator PURTELL. Have you stated your suggestions? Are they stated in your paper?

Dr. MOBBS. I make no specific suggestions.

Senator PURTELL. They are in this paper?

Dr. MOBBS. On the first page, those that are numbered would correct the bill to make chemicals added to food be required rather than merely useful chemicals, and then I would suggest the sentence that Mr. Rockefeller had previously suggested, that it not be left to chance, that any pesticide that is registered be required to obtain a tolerance or exemption from tolerance before it is registered by the Agriculture people; that you thus amend that basic bill in order to give sense to this thing, and then that you also require those pesticides that we now have on the market be reregistered.

You see these things have come in great number and in great abundance during the past years, the past 10 years. They started with DDT and now we have a whole family of relatives of DDT that are used, and then the war gas things have been put on the market. Well some of them are definitely dangerous, and the Delaney committee in their report, which I partially quote, came to a realization that those things had not been fully and completely tested for toxicity to humans and animals prior to their being put on the market, and so they should be reevaluated.

Senator PURTELL. You certainly have given a great deal of study and thought to this, Doctor, and I want to thank you for your proposals and your testimony. I assure you again, as I assured the other witnesses, it will be given most careful and fair consideration.

Dr. MOBBS. Thank you.

Senator PURTELL. Dr. Crawford, may we have you back again.

Before the doctor leaves, was it your desire to ask questions?

Mr. SNEED. No.

Mr. REIDY. No.

Senator PURTELL. Dr. Crawford, our staff members desire to ask a question. What we are trying to do is to get all the facts that we can before we go to deliberate about the bill.

Mr. SNEED. Dr. Crawford, it has come to the attention of the committee that the dried fruit industry is uncertain as to whether that industry is intended to be included under the provisions in this bill. What is your interpretation of the intent of the bill in that regard?

Dr. CRAWFORD. We had regarded the term "raw agricultural commodities" as used in this bill and as interpreted when used in other statutes that have been on the books for some time as excluding processed foods, and dry fruits are processed foods.

Mr. SNEED. Do you think it is necessary to amend the bill to clarify that matter?

Dr. CRAWFORD. I doubt if it is necessary, particularly if the committee report makes that clear.

Mr. SNEED. Then it is not intended to include the dried fruit industry?

Dr. CRAWFORD. That is my understanding.

Senator PURTELL. Have you any questions?

Mr. REIDY. No questions.

Senator PURTELL. Thank you very much. I want to thank the witnesses for being here this morning to help us gather information.

Mr. REIDY. I do think the record might show that it is my understanding that Dr. Stormont, secretary of the American Medical Association council on pharmacy and chemistry, and Mr. Conley, of the AMA committee on pesticides, who have taken a great interest in this session, were strongly opposed to previous revisions of the bill, and have studied this bill and have no objections.

Senator PURTELL. That is my understanding. I didn't call the witnesses. I notice we have an AMA member here.

Mr. REIDY. The AMA have taken no official action, but these two gentlemen have no objection and have so expressed themselves.

Senator PURTELL. I think that is fine to have on the record. You have been so notified?

Mr. REIDY. Yes.

Senator PURTELL. Now we have more information to go on the record.

We have a letter from Senator Holland, of Florida, in which he strongly favors the enactment of this legislation, along with a statement of Willard M. Fifield, director of University of Florida Agricultural Experiment Station, and I understand he strongly supports this legislation. Both the letter and the statement of Willard M. Fifield will be made a part of the record.

(The letter from Senator Holland and prepared statement of Willard M. Fifield are as follows:)

UNITED STATES SENATE,
COMMITTEE ON PUBLIC WORKS,
June 22, 1954.

Hon. WILLIAM A. PURTELL,
Chairman, Subcommittee on Health,
Committee on Labor and Public Welfare,
United States Senate, Washington, D. C.

MY DEAR SENATOR: I am glad your subcommittee has scheduled hearings on June 23 on S. 2868 and H. R. 7125, which amend the Food, Drug, and Cosmetic Act with respect to pesticide chemicals. The leading agricultural organizations of Florida are strongly in favor of this legislation and appreciate the invitation extended to Mr. Willard M. Fifield, director of the University of Florida Agricultural Experiment Station, to appear before your subcommittee or file a statement for the record. It was impossible for Mr. Fifield to be in Washington on June 23 and he has asked me to forward to you his prepared statement. I enclose it herewith and ask that it be carefully considered and printed in the record of the hearings.

Mr. Fifield has an excellent background in the field of agriculture and has had a great deal of experience with pesticide chemicals. He has been acting chairman of a committee composed of representatives from the leading agricultural organizations in Florida which has been carefully studying the legislation on pesticides which is now before your subcommittee. He is a member of the national experiment stations committee on pesticides, and is administrative advisor of the regional experiment stations project S-22 on pesticidal residues, in which

five States are cooperating. I feel that the statement of Mr. Fifield, who is so eminently qualified, will be of value to your subcommittee.

I strongly favor the enactment of this legislation and hope it will soon be reported favorably by your committee in order that it may pass the Senate and be cleared for the President prior to the adjournment of Congress.

With kind regards, I remain,

Yours faithfully,

SPESSARD L. HOLLAND.

STATEMENT SUBMITTED BY WILLARD M. FIFIELD, DIRECTOR, UNIVERSITY OF FLORIDA AGRICULTURAL EXPERIMENT STATION

I am Williard M. Fifield, director of the University of Florida Agricultural Experiment Station, with headquarters at Gainesville, Fla. I graduated from the University of Florida with the degree of bachelor of science in agriculture in 1930, and a master of science degree in 1932, and have had additional graduate work at Cornell University. I joined the experiment station staff July 1, 1930, as graduate assistant in pecan investigations. In 1932 I was appointed assistant horticulturist for research in horticulture with vegetable crops. I progressed through various ranks in the station and on March 1, 1950, I was appointed director. With this long experience I have become quite familiar with the agricultural problems of Florida and I am particularly familiar with the use of pesticides in the production of our crops. I am a member of the national experiment station committee on pesticides. In addition I am administrative adviser of the southern regional experiment station project S–22 on pesticidal residues, in which five States are cooperating.

For over a year there has been a committee in Florida composed of representatives from our leading agricultural organizations, which has been studying with active interest the proposed legislation on pesticides by the Congress. I have been acting as chairman of this Florida committee, and in the interest of this legislation I appeared before the House Subcommittee of the Committee on Interstate and Foreign Commerce on July 14, 1953, with testimony on behalf of the bill then pending before said committee. Since that time several conferences have been held by interested parties to iron out certain matters in the original bill, over which some controversy developed. We have followed these conferences carefully and some of our Florida people participated in them. The compromise effected in these conferences have been agreed to by all interested parties, including the Pure Food and Drug Administration. To the best of my knowledge no intelligent objections have been raised to H. R. 7125, which was passed by the House of Representatives last April. Senate bill 2868 now before the committee for consideration is, according to my understanding, a companion bill to H. R. 7125.

It is my considered opinion that S. 2868 is a constructive piece of legislation and should become law. Important features of the bill are: (1) It provides for the regulation and control of chemical pesticides separate from the handling of chemicals in essentially unrelated fields; (2) it provides positive and relatively simple machinery with which to control chemical pesticides, with definite provisions in the interests both of the public welfare and of the chemical manufacturing industries; (3) by specifically defining the duties of both public and private agencies, the bill clarifies and makes practical the role of each concerned party; (4) it provides a practical means of establishing tolerance limits promptly and to the extent necessary to protect the public health.

It is generally recognized by all qualified individuals with experience in the commercial production of fruits and vegetables that certain pesticidal chemicals are not only important but essential to the continued production of abundant food crops so that the public will be provided with an adequate food supply. This proposed legislation is badly needed because it affords more reasonable protection to the general public, to the agricultral producers, and to the agricultural chemicals industry, than now exists. It will encourage further research in this important field. It is generally favored by research workers in agricultural experiment stations throughout the United States.

On my own behalf and on behalf of the Florida State Horticultural Society, the Florida Citrus Commission, the Florida Nurserymen's Association, the Florida Agricultural Research Institute, the Florida Fruit and Vegetable Association and the Florida Farm Bureau, for all of whom I am authorized to speak on the subject, I not only recommend passage of S. 2868 but urge that the legis-

lation be approved as soon as practicable because of benefits which will accrue through it to agricultural producers during the current cropping season.

Senator PURTELL. We have a statement from the National Canners Association, and I understand they favor this legislation. That will become a part of the record.

(Letter from the National Canners Association is as follows:)

NATIONAL CANNERS ASSOCIATION,
Washington, June 22, 1954.

Hon. WILLIAM A. PURTELL,
Chairman, Health Subcommittee, Committee on Labor and Public Welfare, Senate Office Building, Washington, D. C.

DEAR SENATOR PURTELL: The National Canners Association, representing the major portion of the processors of fruits and vegetables in the United States, naturally has a great interest in any legislation affecting the production of canning crops. The association has, therefore, given a considerable amount of attention to H. R. 7125, to amend the Federal Food, Drug, and Cosmetic Act with respect to residues of pesticide chemicals in or on raw agricultural commodities.

In lieu of appearing before the subcommittee, the association wishes to take this means of advising the Senate of its endorsement of H. R. 7125 as it passed the House of Representatives and we ask that this letter be made a part of the record.

This proposed legislation will, if enacted, amend the Federal Food, Drug, and Cosmetic Act by providing a new procedure for the establishment of tolerances for residues of pesticide chemicals in or on raw agricultural commodities only. It is the understanding of the National Canners Association and was made clear in the report of the House committee that processed foods will be in exactly the same position following enactment of the bill as before in that tolerances for pesticide residues with respect to processed foods may be established under section 406 of the act; that in the event the Secretary acts to establish a tolerance for residues on processed foods under section 406 actions for adulteration will be taken under section 402 (a) (2) but if the Secretary has not acted under section 406 any action for adulteration because of excessive pesticide residue in the processed food will still be taken under section 402 (a) (1).

In the proposed new section 408 (d) (5) of the Food and Drug Act there is a provision that within 30 days after publication by the Secretary of a regulation with respect to raw agricultural commodities, either establishing a tolerance for residues of a pesticide chemical or exempting a pesticide chemical from the necessity of a tolerance, any adversely affected person may file objections thereto with the Secretary. The various categories of adversely affected persons are not spelled out in this section. However, in view of the large quantities of raw agricultural commodities utilized by the canning industry, we believe and the House committee report so indicates that processors would fall within the definition of adversely affected persons. Our endorsement is contingent on such a construction of the proposed section 408 (d) (5).

Thus, in order that future controversy may be avoided, we would very much appreciate your consideration of the desirability and necessity of appropriately spelling out these two points in the Senate committee report.

Sincerely,

CARLOS CAMPBELL, *Executive Secretary.*

Senator PURTELL. We have a statement from Dr. C. E. F. Guterman, director of Cornell University Agricultural Experiment Station, and it is my understanding that in this statement he approves the proposed legislation. That will become a part of the record.

(The prepared statement by Dr. C. E. F. Guterman reads as follows:)

STATEMENT BY DR. C. E. F. GUTERMAN, DIRECTOR, CORNELL UNIVERSITY AGRICULTURAL EXPERIMENT STATION, AND CHAIRMAN OF THE PESTICIDE SUBCOMMITTEE OF THE EXPERIMENT STATION COMMITTEE ON ORGANIZATION AND POLICY, ASSOCIATION OF LAND-GRANT COLLEGES AND UNIVERSITIES

The agricultural experiment stations in the several States and Territories were established by the Hatch Act of 1887 "in order to aid in acquiring and

diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science." The act authorized the experiment stations to "conduct original researches or verify experiments" on any problem affecting the agricultural industry of the United States, having due regard for the varying conditions and needs of the various States and Territories.

One of the most important phases of every station program is that of conducting research and making recommendations on the control of insect pests, plant diseases, weeds, rodents, and any other forms of plants or animals, including viruses which affect the production, marketing, and distribution of food and fiber. Thus, the State agricultural experiment stations are vitally interested in any legislation affecting the development, regulation, and use of pesticides.

The food protection committee of the National Research Council in a report on the use of chemical additives in foods has stated that the "maintenance and improvement of the present nutritional status of the American public is contingent upon the continued production of an adequate food supply. Plant and animal pests rank among the foremost causes of food destruction, food deterioration, and food contamination. Hence, the necessity of protecting growing crops and produce from serious attack by insects, plant diseases, and other pests is recognized both from the standpoint of quantity and quality of food produced."

The several thousand pages of testimony given by outstanding scientists from all over the United States during the public hearings conducted by the Food and Drug Administration in 1950 (docket No. FDC–57) clearly established the necessity for using pesticides if we are to produce the food needed for our existing population, to say nothing of the additional millions who will have to be fed in future years. It is safe to say that without chemical protection in the form of pesticides, commercial production of most of our fruits and vegetables would be practically eliminated, and the production of many crops, including field corn, small grains, and the like, would be seriously reduced.

The amendments to the Food, Drug, and Cosmetic Act of 1938 proposed in S. 2868 and H. R. 7125 will have a beneficial effect on the pesticide problem from all standpoints, including those of farmers, industry, and consumers for the following reasons:

1. The problems centering around the use of pesticides in connection with food production are quite different from those posed by the use of chemicals that are intentionally added to foods. S. 2868 and H. R. 7125 recognize this fact and create a separate section in the Food, Drug, and Cosmetic Act to deal specifically with pesticides. The term "pesticide" is clearly defined thus to avoid any confusion as to what falls within that category.

2. When a new and improved pesticide has been developed and found safe under stated methods of use, it is important that a tolerance, when needed, be set as soon as possible so that potential users of the pesticide in question may take advantage of the improvement. The prompt setting of tolerances is of vital importance to the experiment stations in making recommendations to farmers with respect to pest control. Under existing legislation, expensive public hearings are required to establish necessity for use, and it often takes years before a definite tolerance has been promulgated. This makes the work of the experiment stations difficult and is a definite handicap to farmers in that it delays putting into practice the results of new research on pesticides.

S. 2868 and H. R. 7125 authorize the Secretary of Health, Education, and Welfare to establish tolerances where needed to protect the public health. It requires the prompt setting of tolerances within 90 days after the filing of a petition by an interested person. Necessity for use is certified to the Secretary by the Secretary of Agriculture, thus doing away with the time-consuming and costly hearings under existing legislation.

3. The Food, Drug, and Cosmetic Act of 1938 and the Insecticide, Fungicide, and Rodenticide Act of 1947 provide for a sound and fair system of dual control whereby foods can be protected from harmful contamination, while at the same time essential pesticides can be used in producing the many food crops grown on farms. This desirable principle of dual control by the Federal Government is not only protected by the amendments proposed under S. 2868 and H. R. 7125, but is further improved to the extent that provision is made for the establishment of advisory committees to consult with the Secretary of Health, Education, and Welfare on tolerances. Such committees are authorized to study independently all data available to the Secretary and make recommendations as soon

as practical or in no event later than 60 days after referral of the data. In other words, this proposal places responsibility for determining highly technical questions in the hands of committees of competent and representative scientists who would study the data submitted in connection with new pesticides and then make unbiased reports and recommendations to the Secretary as to whether a tolerance should be established or the material exempted. There can be no question as to the fairness of this procedure to all concerned.

In conclusion, the State agricultural experiment stations clearly recognize their obligation to protect the public health in making recommendations on the use of pesticides in food production. The provisions in S. 2868 and in H. R. 7125 whereby pesticides will be handled separately and distinguished from intentional chemical additives in foods; whereby tolerances, when necessary, will be established within a reasonable length of time and without costly public hearings regarding necessity for use; and whereby unbiased advisory committees of competent scientists will review data promptly and report to the Secretary of Health, Education, and Welfare—all of these proposed changes will be a distinct aid to the experiment stations in helping to protect the public, while at the same time aiding farmers with their food-production problems. These changes could well serve to stimulate further the production of additional pesticide improvements from the standpoint of efficiency and safety to all concerned. The proposals are fair to all segments of the agricultural industry and, at the same time, will give further assurance that the public is being properly protected.

Senator PURTELL. We have just received today, or just this minute, a report from the Bureau of the Budget. The Bureau of the Budget favors this fee proposal, so the letter indicates. That letter will become a part of the record.

(The letter from the Bureau of the Budget appears at p. 33.)

Senator PURTELL. The committee has received a considerable amount of correspondence from different manufacturers, farm organizations, and research groups all over the Nation urging the prompt enactment of this legislation. Typical of this correspondence is a statement I have here before me, which will be made a part of this record of this hearing, from the New York State Farm Bureau Federation, Inc.

(Letter from New York State Farm Bureau Federation, Inc., is as follows:)

NEW YORK STATE FARM BUREAU FEDERATION, INC.,
Ithaca, N. Y., April 16, 1954.

Re S. 2868, by Senator Aiken

Senator H. ALEXANDER SMITH,
Chairman, Senate Committee on Labor and Public Welfare,
Senate Office Building, Washington, D. C.

DEAR SENATOR SMITH: As an organization of nearly 80,000 farmers in New York State, we are keenly interested in the success of the Aiken bill, S. 2868.

Being a State of great diversification, New York farmers are very large users of pesticides and highly workable legislation governing the use of materials is essential. The Aiken bill provides for a separate section in the Food, Drug, and Cosmetic Act to deal specifically with pesticides, in contrast with another section of the law dealing with materials added to food products. This we think is wise.

Things move rapidly in agriculture and there has to be a constant strive for new pesticide materials to meet the needs. It is important that legislation provide for getting these materials into common use at the earliest possible moment with the public health of the Nation properly safeguarded.

The Aiken bill provides for establishing tolerances where needed within a 90-day period after petitions are filed by interested persons with the necessity to be certified by the Secretary of Agriculture.

The dual control of the Food, Drug, and Cosmetic Act of 1938 and the Insecticide, Fungicide, and Rodenticide Act of 1947 is adequately protected in the Aiken bill. In fact, the protection is even improved by the establishment of advisory committees authorized to make independent data available and to make recommendations within a 60-day period after referral of data.

The Aiken bill would provide for a much more workable system than now exists in connection with the lengthy and prolonged hearings and the long delays involved in rendering decisions.

We trust you will use your every influence to advance the Aiken bill as rapidly as possible.

Sincerely yours,

E. S. FOSTER,
General Secretary.

Senator PURTELL. We have other such statements, but these will become a part of this record.

(Letters from organizations listed read as follows: United States Sanitary Specialties Corp., United Fresh Fruit & Vegetable Association, Pennsylvania Salt Manufacturing Co., of Washington, Huntington Laboratories, Inc., Northwest Horticultural Council, Chapman Chemical Co., Columbia-Southern Chemical Corp., Boyce Thompson Institute for Plant Research, Inc., National Apple Institute, Chemical Specialties Manufacturers Association, the Rogers & Hubbard Co., Hayes-Sammons Chemical Co., California Spray-Chemical Corp., National Cotton Council of America.

UNITED STATES SANITARY SPECIALTIES CORP.,
Chicago, Ill., April 16, 1954.

Senator H. ALEXANDER SMITH,
Chairman, Committee on Labor and Public Welfare,
Senate Office Building, Washington, D. C.

DEAR SENATOR SMITH: I am writing to you in your capacity as chairman of the Committee on Labor and Public Welfare of the Senate to which Senate bill (S. 2868) and House bill (H. R. 7125) concerning pesticide residue have been committed.

I have personal knowledge that a great deal of work on these bills has been done by the House committee in cooperation with the various trade associations and it is considered on all sides, so far as I know, to be an extremely necessary bill. I am quite sure that when your committee has studied this bill, you will reach the same conclusions.

Unfortunately, I am also aware that your committee has many other important bills before it and, for that reason, this letter urges that you give the above-mentioned bills priority so that they may be dealt with in this session of Congress.

Sincerely yours,

W. S. JESSOP.

UNITED FRESH FRUIT & VEGETABLE ASSOCIATION,
Washington, D. C., April 15, 1954.

Hon. H. ALEXANDER SMITH,
Chairman, Senate Committee on Labor and Public Welfare,
United States Senate, Washington, D. C.

MY DEAR SENATOR SMITH: May I invite your attention to S. 2868, now before your committee, to amend the Federal Food, Drug, and Cosmetic Act with respect to residues of pesticide chemicals in or on raw agricultural commodities.

We have noted with pleasure the passage by the House of an almost identical bill, H. R. 7125. Both measures are important to the fresh fruit and vegetable industry because they seek to improve present procedures for establishing tolerances for the amount of poisonous insecticides and fungicides that may remain on our products after they are grown. These chemicals, as you know, are used in fresh fruit and vegetable production by necessity, not choice, and since this is so, proper tolerances are necessary to safeguard public health. We believe both measures adequately do this, at the same time improving the procedures for evaluating the toxicity of the chemicals we must use.

The membership of the organization I represent—the United Fresh Fruit & Vegetable Association—includes growers, shippers, brokers, wholesale distributors, and related organizations. It is the largest national trade association in the industry, with some 3,000 members in all the States. We believe this legislation is urgently needed and that action upon it should be concluded during the

current session of Congress. For that reason we hope it may be possible for your committee to give it consideration at an early date.

Sincerely,

C. W. KITCHEN,
Executive Vice President.

PENNSYLVANIA SALT MANUFACTURING CO., OF WASHINGTON,
Tacoma, Wash., April 20, 1954.

Senator H. ALEXANDER SMITH,
Senate Office Building, Washington, D. C.

DEAR SENATOR SMITH: Your Committee on Labor and Public Welfare has for its consideration a bill introduced by Senator George D. Aiken, S. 2868, and also, the Miller bill, H. R. 7125, recently passed by the House of Representatives. It is respectfully requested that early and favorable attention be given this proposed legislation.

The writer has had 20 years' experience dealing with farmers who have used chemicals in one form or another for the purpose of growing, protecting, or processing farm products. It is my considered opinion that the proposed amendment to the Federal Food, Drug, and Cosmetic Act will be good for the farmer and for the public alike. Residues of insecticides and other farm chemicals on agricultural products will be limited in a manner readily understood by all parties, regardless of the amount of education possessed or scientific background. The writer is convinced that the amendment is badly needed and will serve to strengthen as well as clarify a portion of the Federal Food, Drug, and Cosmetic Act referred to above.

Respectfully yours,

FRED SHANAMAN, *President.*

HUNTINGTON LABORATORIES, INC.,
Huntington, Ind., April 20, 1954.

Re Aiken bill, S. 2868.

Hon. H. ALEXANDER SMITH,
Chairman of the Committee on Labor and Public Welfare,
Washington, D. C.

DEAR SENATOR SMITH: You have much important legislation under consideration by the Committee on Labor and Public Welfare, of which you are the chairman. A most vital bill now in your committee is Senator Aiken's bill, S. 2868. The companion bill in the House, Miller bill, H. R. 7125, has already passed. For the good of both agriculture and the people at large, we urge you to give consideration to S. 2868 as soon as possible.

We hope that your committee will give prompt approval of this pesticide-residue bill. This is essential if the bills are to pass during the current session of Congress.

Thank you kindly for your consideration of this urgent matter.

Yours sincerely,

EARL BRENN, *Vice president.*

NORTHWEST HORTICULTURAL COUNCIL,
Yakima, Wash., April 23, 1954.

Re H. R. 7125.

Hon. H. ALEXANDER SMITH,
Chairman, Labor and Public Welfare Committee,
United States Senate, Washington, D. C.

MY DEAR SENATOR SMITH: The Northwest Horticultural Council represents the growers of practically 100 percent of the apples and in excess of 90 percent of other deciduous fruits grown commercially in the States of Washington and Oregon. There are more than 9,000 growers in this area.

Without essential pesticides, our fruit industry could not survive. Moreover, we recognize the necessity for rules and regulations which prohibit the unrestricted use of any and all pesticides. Of necessity, the public health must be protected. Rules and regulations must be intelligently prescribed and administered to protect public health without working unnecessary hardship on the

fruit growers. Unfortunately, this has not been the case under prior legislation and regulations.

We believe that H. R. 7125 will accomplish this objective. H. R. 7125 developed from various conferences between the Food and Drug Administration, manufacturers of chemicals, representatives of the land-grant colleges, and farm organizations. Objectionable features of earlier bills were satisfactorily adjusted. Thereupon, it was favorably reported out by the House committee and we understand was enacted into law without objection from the floor of the House.

Since this bill reflects the combined thinking of the Department of Health, Education, and Welfare (who must administer it), and the segments of industry who will be affected by it, we sincerely hope that hearings can be scheduled by your committee at an early date and the bill favorably reported, with or without amendments, so that it may be enacted into law this session. We suggest the possibility of amendments because we understand the Dried Fruit Association of California feels there is some doubt whether dried fruits are included. If dried fruits are included, they feel the tolerances should be established on the basis of the weight of the fruit after normal rehydration or on a fresh basis. This proposal seems reasonable and we have no objection to it.

Your assistance in processing H. R. 7125 through committee hearings and reporting it to the floor will be appreciated.

Respectfully yours,

ERNEST FALK, *Manager.*

CHAPMAN CHEMICAL CO.
Memphis, Tenn., April 22, 1954.

Senator H. ALEXANDER SMITH,
Chairman, Committee on Labor and Public Welfare,
Senate Office Building, Washington, D. C.

DEAR SENATOR SMITH: We are advised that the House of Representatives has passed the Miller bill, H. R. 7125, and that the Aiken bill, S. 2868 (which is identical to the Miller bill) is with the Miller bill in the Committee on Labor and Public Welfare of the Senate.

We believe that the Miller and Aiken bills should be passed by Congress and acted upon by the Committee on Labor and Public Welfare of the Senate as promptly as possible to assure their being passed during the current session of Congress. We think that these bills will assure the protection of the public welfare and, at the same time, assure that pesticides are made available to farmers to protect the food and fiber supply of the Nation.

We hope, therefore, that you will make a personal effort to see to the passage of these bills.

Yours very truly,

R. C. HARNDEN,
Vice-President.

COLUMBIA-SOUTHERN CHEMICAL CORP.,
Pittsburgh, Pa., April 15, 1954.

Hon. H. ALEXANDER SMITH,
United States Senate, Washington 25, D. C.

MY DEAR SENATOR: H. R. 7125 and S. 2868, bills to amend the Federal Food, Drug and Cosmetic Act with respect to residues of pesticide chemicals in or on raw agricultural commodities, have been referred to your Committee on Labor and Public Welfare for consideration.

We manufacture agricultural pesticides and are vitally interested in the bills. They have our wholeheated support. May we urge most earnestly that you and your committee give the bills prompt and favorable consideration.

The enactment of the bills will remedy and supply the deficiencies and ommissions of the Food and Drug Act. The bills will remove the serious handicaps now facing the chemical industry in the development of more efficient and effective pesticides. The passage of the bills will materially decrease the staggering losses suffered by farmers and consumers from the ravagings of the crops by fungi and pests.

The methods and procedures for establishing chemical pesticide tolerances set out in the bills assure that the public interests, public health and public safety will be protected to the utmost at all times. The bills provide for an orderly process in which the views and ideas of all affected groups may be

heard and their rights amply protected in accordance with the due process of law.

We realize that your committee has many other important bills before it. Nevertheless we urge the prompt consideration and passage of these bills, as they are of vital importance not only to the chemical industry but to the Nation as a whole.

Very truly yours,

E. T. ASPLUNDH,
President.

BOYCE THOMPSON INSTITUTE FOR PLANT RESEARCH, INC.,
Yonkers, N. Y., April 9, 1954.

Hon. H. ALEXANDER SMITH,
Senate Building, Washington, D. C.

DEAR SENATOR SMITH: I understand that House Resolution 2868 (the Aiken bill) which is identical to the Miller bill in the House of Representatives is in your Committee on Labor and Public Welfare. May I urge you to use your good offices in getting this out of committee and onto the floor where your colleagues may pass judgment on it.

There is every reason why this proposal should be enacted into law as soon as possible. The ideas embodied therein are the fruit of long and painstaking fact gathering and discussion. The best experts on use of chemicals in crop and livestock production and in food processing contributed their best ideas.

The public is entitled to a comprehensive law protecting their welfare. This one embodies the better features of past experience and offers several commendable innovations that should reenforce existing statutes. The plan should be workable because it has the support of scientists, industry, and Government agencies with only minor exceptions.

The bill has wisely differentiated between those chemicals added to foods largely for convenience and those materials such as pesticides that are absolutely necessary for production of crops and livestock in the quantities and of the quality necessary to meet American dietary standards and which may occur fortuitously. The American farmer's interest should not be harmed while the consumer is being given even better protection than present laws afford. I would be most surprised if the farmers' organizations would not be for this bill.

The scientists of this country who have had the responsibility of developing methods of increasing production and decreasing waste from insect, disease, and weed invasions have long been concerned over the hazard to the public health from introducing vitally needed new chemicals. For the first time many of us feel that a law is in sight which does provide the protection without impeding or discouraging research progress.

You will be serving the interests of all segments of American life in placing your support behind this bill. I urge you to see it through its final stages and onto the statute books. The American people are entitled to it.

Very truly yours,

GEORGE L. MCNEW,
Managing Director.

NATIONAL APPLE INSTITUTE,
Washington, D. C., April 9, 1954.

Senator H. ALEXANDER SMITH,
Chairman, Committee on Labor and Public Welfare,
United States Senate, Washington, D. C.

DEAR MR. CHAIRMAN: Two bills of importance to the public safety and to the food supply are before your committee. They are S. 2868 by Senator Aiken, and the identical H. R. 7125, which was passed by the House last week.

This legislation provides means for safe control of residual amounts of pesticide spray materials used to protect crops.

Present law, dating from fifteen years ago, had proved so unworkable that the effective safeguards have had to be found in unofficial and informal means.

Moreover, research and development work in pest control, which can never be allowed to lag if we are to continue eating well, is increasingly impeded and handicapped by the lack of statutory provision of workable procedures for the establishment of the necessary safety zones.

These bills are intended to correct that situation.

We have not heard of any opposition. Everyone concerned with the problem, so far as we know, favors enactment of this legislation.

As food producers who have to use pesticide materials, we carry a great responsibility to merit and hold the public's confidence in the cleanliness and healthfulness of our produce. We earnestly request the committee's assistance to provide the way for the Government to carry out its proper responsibility.

We hope the fact that this legislation is not involved in controversy, and that it is so plainly important to the public welfare, will permit the Committee to give it early consideration.

Sincerely,

TRUMAN NOLD.
Executive Secretary.

CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION, INC.,
New York, N. Y., April 23, 1954.

Senator H. ALEXANDER SMITH,
Chairman, Committee on Labor and Public Welfare,
Senate Office Building, Washington, D. C.

DEAR SENATOR SMITH: This association endorses H. R. 7125 and S. 2868. We understand that both of these bills are before your committee.

The members of this association believe that the provisions of these bills would increase the protection to the public by providing a practical procedure for establishing safe tolerances for pesticidal residues which remain on food. Our members believe that it is quite important that these bills be enacted at this session of Congress.

We respectfully request that your committee give early consideration to these bills.

Very truly yours,

H. W. HAMILTON,
Secretary.

THE ROGERS & HUBBARD CO.,
Portland, Conn., April 16, 1954.

Subject: Aiken bill S. 2868

Hon. H. ALEXANDER SMITH,
Chairman, Committee on Labor and Public Welfare,
Senate Office Building, Washington, D. C.

DEAR SIR: We know that your committee has much important legislation before it for action during the present session, but we respectfully request you give priority to the Aiken bill S. 2868, and endeavor to have it passed this session. This legislation is urgently needed to give stability and guidance to the pesticide industry and protection to the public.

We can see no reason why there should be any delay in connection with its passage. Both industry and the enforcement agencies have approved its provisions and we understand no opposition, whatever, developed at the hearing on the corresponding House bill, which has been passed. We believe this bill could be handled without any delay, if it were brought up for passage and we think its importance to agriculture warrants early consideration.

Very truly yours,

A. F. KINGSBURY,
President.

HAYES-SAMMONS CHEMICAL CO.,
Mission, Tex., April 14, 1954.

Senator H. ALEXANDER SMITH,
Chairman, Committee on Labor and Public Welfare,
Senate Office Building, Washington, D. C.:

There are two bills before your committee at this time which we feel are of the utmost importance. These are the Miller bill, H. R. 7125, and the Aiken bill, S. 2868, known as the Senate and House pesticide residue bills.

Prompt approval of these two bills by your committee is respectfully requested.

THOS. B. SAMMONS, Jr.

CALIFORNIA SPRAY-CHEMICAL CORP.,
Caldwell, Idaho, April 20, 1954.

Subject: Senate and House pesticide residue bills.

H. ALEXANDER SMITH,
Chairman, Committee of Labor and Public Welfare,
Senate Building, Washington, D. C.

SIR: The above-entitled bills are now before the Committee on Labor and Public Welfare of the Senate. I would like to earnestly solicit your support of this legislation. For the first time it sets up a workable system whereby farmers can get necessary chemicals to produce food-and-fiber crops without being subject to the chaos and confusion as regards handling and chemical residues. This is good legislation and in the public interest.

Very truly yours,

T. P. STRAND, *District Manager.*

STATEMENT OF J. BANKS YOUNG, WASHINGTON REPRESENTATIVE, NATIONAL COTTON COUNCIL OF AMERICA

My name is J. Banks Young. I am Washington representative of the National Cotton Council, which maintains its headquarters in Memphis, Tenn. The Cotton Council is the overall organization of the cotton industry representing farmers, ginners, warehousemen, merchants, spinners, and cottonseed crushers. We appreciate the opportunity to submit a statement supporting the basic principles of S. 2868 and H. R. 7125 dealing with safe residue of pesticidal chemicals.

The cotton industry is extremely interested in an aggressive research and development program and the widest possible use for more effective pesticides consistent with the necessary measures required to protect the consuming public. The council, along with other farm groups and the chemical industry, has devoted considerable time to studying this proposed legislation, and we feel that the basic principles of these bills are sound and desirable.

Our interest in this particular legislation stems from the fact that the cotton industry in its effort to increase efficiency is becoming more dependent on the use of insecticides, fungicides, herbicides, defoliants, and other agricultural chemicals. The cotton crop requires somewhere in the neighborhood of 50 to 60 percent of the total insecticides used in the United States. This fact emphasizes the extreme importance of basic legislation which would permit orderly research for developing new and improved insecticides. However, we cannot and do not overlook the need for safe use of pesticides and the protection of the consuming public.

In the case of cotton, most pesticides are applied before the fiber and seed are exposed and there is virtually no hazard involved. However, the fact remains that pesticides used on cotton are bound by the same laws as those used by all crops. Therefore, legislation affecting pesticides has a direct bearing on the cotton industry.

The basic issue of this problem seems to hinge on the establishment of safe tolerances of pesticidal residue with orderly procedure in case of differences of opinion between the chemical industry and the Food and Drug Administration. We feel that the provisions contained in S. 2868 and H. R. 7125 adequately meet these criteria and we urge that your committee take favorable action on this proposed legislation.

Senator PURTELL. If there are no further witnesses, this hearing is hereby ended and the subcommittee will stand adjourned.

(Whereupon, at 12 o'clock noon, the committee adjourned.)

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